microwork resources

TWIG's microwork library

Of the 500 resources reviewed for this study, we've selected the top ~100. They are listed below, grouped by type of resource and in alphabetical order.

Articles | Books | Mandate Letter | Podcast | Reports | Research Articles | Websites

Articles

AI Is Learning From Humans. Many Humans (2019)

Link to article

A look at human labelling services for AI training, focusing on a non-platform company called iMerit with locations in India and the US that provides outsourcing for major companies like Microsoft. Source: New York Times

Amazon Workers Are Listening to What You Tell Alexa (2019)

https://www.bloomberg.com/news/articles/2019-04-10/is-anyone-listening-to-you-on-alexa-a-global-team-reviews-audio

Describes the role of workers doing microtasks for Amazon Alexa voice interpretation. Summary: "The team comprises a mix of contractors and full-time Amazon employees who work in outposts from Boston to Costa Rica, India and Romania, according to the people, who signed nondisclosure agreements barring them from speaking publicly about the program. They work nine hours a day, with each reviewer parsing as many as 1,000 audio clips per shift, according to two workers based at Amazon's Bucharest of. ce, which takes up the top three floors of the Globalworth building in the Romanian capital's up-and-coming Pipera district." Source: Bloomberg News

California Senate passes bill to limit the gig economy (2019)

https://www-theverge-com.cdn.ampproject.org/c/s/www.theverge.com/platform/amp/2019/9/11/20860372/ab5-california-bill-uber-lyft-postmates-senate-gig-economy

Excerpt: "The California Senate has passed legislation that will make it more difficult to classify workers as independent contractors." Source: The Verge

Crowd-Augmented Cognition (2016)

Link to article

Press release showcasing the work of an NSF fellow building crowdwork platforms to accomplish high-value knowledge synthesis work. Source: National Science Foundation

Exploring the global flow of digital labour (2019)

https://phys.org/news/2016-06-exploring-global-digital-labour.html

IDRC review of demand/labour flows between global north Summary: "The research involves analysing data from leading microwork businesses, surveys of 2,000 contract service providers, and interviews with hundreds of digital freelancers." Source: International Development Research Centre

Federal union members reject new organization for gig workers (2019) CDN

Link to article

One of Canada's largest public service unions spent two years developing a proposal for a pioneering guild-style organization to represent professionals in precarious work, only to have the idea defeated by members in a recent vote. But the proposal was soundly rejected at PIPSC's annual meeting. The strongest resistance came from the union's 16,000 technology workers, who are keenly aware how new technologies could eliminate all or parts of many jobs – including theirs. Source: Policy Options

Findings of Shift: The Commission on Work, Workers, and Technology (2017)

https://shiftcommission.work/findings-of-shift-the-commission-on-work-workers-and-technology-a071bc169df0

Foresight-type exercise on the future of work from 2027-37, tapping 100 plus SMEs, survey, personal interviews and deep background research. Source: Medium/Shift

Gig economy fuelled 'lost decade' in wage growth – Bank economist (2018)

https://www.theguardian.com/money/2018/oct/10/gig-economy-fuelled-lost-decade-in-wage-growth-bank-economist-andy-haldane

"Effects of job insecurity and uncertain hours on pay" Source: The Guardian

Google hired gig economy workers to improve artificial intelligence in controversial drone-targeting project (2019)

https://theintercept.com/2019/02/04/google-ai-project-maven-figure-eight

Describes Google's outsourcing of microtasks related to US Defence Department Project Maven, which helped improve battlefield drone targeting capacity. Source: The intercept

Law Commission of Ontario Digital Rights Project (2018) CDN

https://www.lco-cdo.org/wp-content/uploads/2019/01/Digital-Rights-November-20-Roundtable-Materials.pdf

Excerpt: "Employment and labour legislation lags developments while caselaw becomes increasingly contradictory." Insights into how policy and legislation has not caught up to microwork and other gig economy trends and practices in Canada. Source: Law Commission of Ontario

Microwork is the new, new buzzword in global outsourcing (2018) CDN

https://www.theglobeandmail.com/news/world/microwork-is-the-new-new-buzzword-in-global-outsourcing/article4188193

Excerpt: "Microwork providing a living wage and work for vulnerable people in the Global South." Source: Globe and Mail

Online gig economy is growing but no one knows by how much (2018) CDN

https://www.cbc.ca/news/business/canada-s-digital-workers-1.4889691

A brief overview of gig work, the OLI's iLabour project, and makes the case for the need for better understanding of the numbers of people working through platform intermediaries to access work. Source: CBC

Scale AI's Series C (2019)

https://scale.com/blog/series-c

Scale is a tech company that accelerates the development of AI applications. Scale has raised $100m at a valuation of over $1B. Source: Scale API

Tasker movement championed as solution to Toronto's precarious work problem (2015) CDN

https://www.thestar.com/business/2015/07/24/tasker-movement-championed-as-solution-to-torontos-precarious-work-problem.html

In 2015 Toronto was visited by British innovator Wingham Rowan to introduce the "Central Database of Available Hours, or CEDAH… conceived as a tool for the British government to tackle the rise of insecure work and give precarious workers more control over their life …" Related: http://beyondjobs.com http://www.pacific-gateway.org/beyondjobs Source: Toronto Star

The Case for a Global Open Platform for Work (2019) CDN

Link to article

An brief suggesting that governments invest in public digital infrastructure to enable greater employment and career flexibility. Source: Policy Options

The hidden human labour behind search engine algorithms (2017)

Link to article

Explanation of the microwork involved in Google's search ranking process, based on https://journals.sagepub.com/doi/abs/10.1177/2053951716652159. Source: London School of Economics and Political Science

The Humans Working Behind the AI Curtain (2017)

https://hbr.org/2017/01/the-humans-working-behind-the-ai-curtain

Influential HBR piece on microwork as part of "automation's last mile," by two Microsoft researchers. Excerpt: "The AI of today can't function without humans in the loop, whether it's delivering the news or a complicated pizza order. Content moderation and curation — from newsfeeds, and search results to adjudicating disputes over appropriate content — involve people hired by technology and media companies to make judgments about what to leave up or take down." Source: Harvard Business Review

The inequity of online labor platforms (2018) CDN

Youtube link | Link to article

Saadia Muzaffar: "For the vast majority of these workers, their only contact with their employer is through an app. You sign up through an app, you interact with them through an app, you get paid through an app. These platforms also purposely don't provide any way for these workers to connect with one another, so it is a very lonely existence as a worker." Source: The Walrus

The Real Payoff From Artificial Intelligence Is Still a Decade Off (2018)

Link to article

Addresses the gap between implementation and payoff for general-purpose technologies as explanation for delayed AI effects. Source: Financial Post

Towards a Fairer Platform Economy (2018)

https://www.jamiewoodcock.net/blog/towards-a-fairer-platform-economy

Manifesto for labour rights mobilization by an academic sociologist associated w ENDL (http://ses.telecom-paristech.fr/birth-of-endl-the-european-network-on-digital-labour/). Source: Alternate Routes

Urban Cowboy E-Capitalism Meets Dysfunctional Municipal Policy-Making: What the Uber Story Tells Us about Canadian Local Governance (2018) CDN

https://ruor.uottawa.ca/bitstream/10393/38506/1/9780776627526_WEB.pdf

Chapter in a larger book: Law and the "Sharing Economy": Regulating Online Market Platforms – further illustrating the challenges of regulating microtasking and more. Source: University of Ottawa Press

Women going freelance face bigger gender pay gap (2019)

https://amp-ft-com.cdn.ampproject.org/c/s/amp.ft.com/content/03d49cb8-def4-11e9-b8e0-026e07cbe5b4

The 21st-century workplace and the rise of the gig economy, it turns out, bring their own challenges on remuneration, with a gender pay gap that is wider than the average found in employed occupations Source: Financial Times

Workers in the gig economy feel lonely and powerless (2019) CDN

https://theconversation.com/workers-in-the-gig-economy-feel-lonely-and-powerless-127188

Summarizes an as-yet-unpublished survey of Canadian workers in Canada by a trio of sociologists – including U of T department chair – with gig-relevant section, finding overall higher levels of stress, isolation and disempowerment among gig workers versus others. Source: The Conversation

Working conditions on digital labour platforms: Opportunities, challenges, and the quest for decent work (2019)

https://voxeu.org/article/working-conditions-digital-labour-platforms

Summary of ILO survey findings re: platform labour, cited separately as a signal, supplemented by further related research. Excerpt: "This column begins to fill that gap in the scholarship using an ILO survey of 3,500 workers from 75 countries and five major microtask platforms. It finds that even workers who perform valuable labour for successful companies often do so for low wages and without the protections of a regulated employment relationship." Source: VOX, CEPR Policy Portal

Books

Algorithms that Divide and Unite: Delocalisation, Identity and Collective Action in 'Microwork' (2016)

https://link.springer.com/chapter/10.1057/978-1-137-48087-3_4

(Chapter) Abstract: "… The exploitation of global wage, skill, and regulatory differentials means that workers are often physically, temporally, and administratively detached and desynchronised from each other (Ashford et al. 2007). In the extreme case, coordination of workers' efforts is achieved algorithmically, that is, by automated data and rule based decision making (O'Reilly 2013), leaving no opportunity for human-to-human communication. Under such dispersal and disconnection, it would seem difficult for a common identity, let alone effective organisation, to arise among workers."

Source: Dynamics of Virtual Work book series

Digital Labour Markets in the Platform Economy: Mapping the Political Challenges of Crowd Work and Gig Work (2017)

https://www.researchgate.net/publication/
314719905_Digital_Labour_Markets_in_the_Platform_
Economy_Mapping_the_Political_Challenges_of_Crowd_Workand_Gig_Work

Overview of the various modes of digital labour market, with lucid division by mode of work and specificity of assignment.

Source: Friedrich-Ebert-Stiftung

Ghost Work: How to stop Silicon Valley from building a new global underclass (2019)

Link to book on Amazon

Critical view of the "ghost economy" that encompasses microwork, with particular attention to its spread to global south.

Source: Houghton Mifflin Harcourt

Motivation of Workers on Microtask Crowdsourcing Platforms (2018)

https://www.springer.com/gp/book/9783319726991

About – "This book studies the motivation of crowdworkers to find out how to attract more people and reach a higher quality of outcomes. The book first proposes a taxonomy for studying the motivation of crowdworkers including the potential influencing factors, different types of motivation, and possible consequences and outcomes related to the motivation."

Source: T-Labs Series in Telecommunication Services

Mandate letter

Minister of Labour Mandate Letter (2019) CDN

https://t.co/s8on4muhqs

Mandate letters were just released today for Canadian Labour Minister and it includes: "Develop greater #labourprotections for people who work through digital #platforms, whose status is not clearly covered by provincial or federal laws..." @Labour_ESDC

https://t.co/s8on4muhqs

Source: Prime Minister of Canada

Podcast

Retrofitting social security to new ways of working (2019)

https://soundcloud.com/oecd/retrofitting-social-security-to-new-ways-of-working-oecds-monika-queisser

Podcast on new ways of working. Discussion about the social security/protection system and adaptation to non-traditional employment (SER, standard employment relationship) – non-standard workers

Source: OECD

Reports

Automation Across the Nation: Understanding the potential impacts of technological trends across Canada (2017) CDN

https://brookfieldinstitute.ca/report/automation-across-the-nation/

Brookfield report on projected automation impacts for Canadian regional economies.

Automation will presumably be a key determinant of our labour market futures considerations, and this offers a usefully granular emphasis by regional economy.

Source: Brookfield Institute for Innovation and Entrepreneurship

Behind the Bargains: How the sharing economy impacts health (2015) CDN

https://www.wellesleyinstitute.com/wp-content/uploads/2015/09/Behind-the-Bargains_How-the-sharing-economy-impacts-health-.pdf

Wellesley Institute piece on the potential public health impacts of "the sharing economy," which they essentially take here to mean on-demand services and asset sharing like AirBnB.

Source: Wellesley Institute

Beyond Gig Work (2017)

http://www.aecf.org/m/resourcedoc/rowan-beyondgigwork-2017.pdf

Seemingly the main summary of Wingham Rowan's advocacy reseach, used to underpin the Central Database of Available Hours projects he's been advocating (see http://beyondjobs.com).

Source: Annie E. Casey Foundation

City of Toronto 2018 Employment Bulletin (2018) CDN

https://www.toronto.ca/wp-content/uploads/2019/03/8fd3-Toronto-Employment-Survey-2018-Bulletin.pdf

Provides a snapshot of employment trends and statistics in Toronto over 2018.

Employment in Toronto is increasingly trending towards part-time jobs: "Full-time employment (75.3% of total) grew more slowly than the city average, adding 15,580 jobs (1.4%) from 2017. Part-time employment (24.7% of total) added 11,360 jobs (3.1%) from 2017. The 2017-2018 trend reflects a long-term increase in the share of part-time employment in the city. The share of part-time employment has grown on average by 1.2% per annum since 2008."

Source: City of Toronto

Crowdsourced Production of AI Training Data: How Human Workers Teach Self-Driving Cars How to See (2019)

https://www.boeckler.de/pdf/p_fofoe_WP_155_2019.pdf

A deep look at the automotive industry's use of microworkers to train autonomous vehicle programs, including interviews with car and platform company leaders

Source: Forschungs-Forderung

Digital platforms and the future of work: Towards decent work in the online world (2018)

https://www.ilo.org/wcmsp5/groups/public/—dgreports/—dcomm/—publ/documents/publication/wcms_645337.pdf

Introduction: "Based on the survey findings, this report provides one of the first comparative studies of working conditions on microtask platforms. It presents the basic characteristics and motivations of workers to undertake these tasks, and finds both commonalities and differences between workers from the global North and global South. The report analyses the working conditions on these micro-task platforms and advances a series of principles for improving working conditions on digital labour platforms."

Source: International Labour Organization

Employment and working conditions of selected types of platform work (2018)

https://www.eurofound.europa.eu/publications/report/2018/employment-and-working-conditions-of-selected-types-of-platform-work#tab-01

Abstract: "This report explores the working and employment conditions of three of the most common types of platform work in Europe … A comparative analysis of the regulatory frameworks applying to platform work in 18 EU Member States accompanies this review. This looks into workers' employment status, the formal relationships between clients, workers and platforms, and the organisation and representation of workers and platforms."

Source: Eurofound

Future-proof: Preparing young Canadians for the future of work (2017) CDN

http://www.rbc.com/community-sustainability/_assets-custom/pdf/FINAL-FP-report-Online.pdf

The report explores how Canadian youth can easily enter an increasingly technology/innovation-focused labour force, while facing multiple barriers to labour force participation (including for those who have traditionally been underrepresented in knowledge-based industries) and how freelancing/gig economy work might be a career pathway for young workers to join the expanding tech economy.

Source: Brookfield Institute for Innovation and Entrepreneurship

Gender and the gig economy: Critical steps for evidence-based policy (2019)

https://www.odi.org/sites/odi.org.uk/files/resource-documents/12586.pdf

Jan 2019 overview of gig work generally, from a gender lens, aimed at charting a policy path forwards.

Source: Overseas Development Institute

Getting Left Behind: Who gained and who didn't in an improving labour market (2018) CDN

https://pepso.ca/documents/pepso-glb-final-lores_2018-06-18_r4-for-website.pdf

Summary: "In times of economic growth, it is fair to expect that wages and job quality will improve with positive benefits being experienced throughout society. But between 2011 and 2017 … our research found that these expectations did not come true … tells the story of workers typical of those discussed below and explores who gained, and who did not, as the labour market in the GTHA improved."

Source: Poverty and Employment Precarity in Southern Ontario

Independent work: Choice, necessity and the gig economy (2016)

https://www.mckinsey.com/featured-insights/employment-and-growth/independent-work-choice-necessity-and-the-gig-economy

McKinsey Global Institute analysis of platform labour market dynamics, including an 8,000-person survey of platform workers. Among other relevant research, the report uses survey data to segment platform workers into four categories, which combine earning levels and attitudes towards their work.

Source: McKinsey Global Institute

Labor 2030: The Collision of Demographics, Automation and Inequality (2018)

https://www.bain.com/insights/labor-2030-the-collision-of-demographics-automation-and-inequality/

A prediction of labour market trends for 2030, highlighting automation, demograpics and inequality as drivers of business volatility.

Source: Bain & Company

Measuring the Gig Economy in Canada Using Administrative Data (2019) CDN

https://www150.statcan.gc.ca/n1/pub/11f0019m/11f0019m2019025-eng.htm

This study identifies gig workers based on characteristics of their work arrangements and how these are reported in tax data. It introduces a definition of gig work specific to the way work arrangements are reported in the Canadian tax system and estimates the size of the gig economy in Canada using administrative data. The share of gig workers among all workers rose from 5.5% in 2005 to 8.2% in 2016.

Source: StatsCan

Micro-work in France (Le Micro-Travail en France) (2019)

https://www.eurofound.europa.eu/data/platform-economy/records/micro-work-in-france-le-micro-travail-en-france

A substantial survey of microworkers in France, from the Digital Platform Labour project.

Source: DiPLab

OECD Employment Outlook 2019 : The Future of Work (2019)

https://www.oecd-ilibrary.org/sites/9ee00155-en/1/2/4/index.html?
itemId=/content/publication/9ee00155-
en&_csp_=b4640e1ebac05eb1ce93dde646204a88&itemIGO=oecd&itemContentType=book#figure-
d1e7428

Abstract: "This chapter discusses the role of labour market regulations to adequately protect workers in a changing world of work. A key focus of the chapter is on employment status – a critical area because it acts as a gateway to various worker rights and protections. Ensuring the correct classification of workers is therefore a key first step to ensure access to labour and social protection, collective bargaining and lifelong learning."

Source: OECD

OECD Employment Outlook 2019 : The Future of Work (2019)

https://www.oecd.org/employment/rapid-action-needed-for-people-to-meet-challenges-of-
changing-world-of-work.htm

The OECD Employment Outlook 2019 is part of the OECD's Future of Work initiative and the "I am the Future of Work" campaign, which aims to make the future of work better for all, helping to transform learning and social protection systems and reduce inequalities between people and across regions.

Source: OECD

Paychecks, Paydays, and the Online Platform Economy: Big Data on Income Volatility (2015)

https://www.jpmorganchase.com/corporate/institute/document/jpmc-institute-volatility-2-
report.pdf

Research report drawing on anonymized data from one million of their US clients to see how their gig income was actually used. Fascinating big-data look at real revenue flows from platforms to people.

Source: JP Morgan Chase & Co Institute

Platform Sourcing: How Fortune 500 Firms Are Adopting Online Freelancing Platforms (2017)

https://www.oii.ox.ac.uk/publications/platform-sourcing.pdf

Survey of large corporate actors' and their adoption of outsourcing platforms.

Source: Oxford Internet Institute

Raising Pay and Providing Benefits for Workers in a Disruptive Economy (2018)

https://www.americanprogress.org/issues/economy/reports/2017/10/13/440483/raising-pay-providing-benefits-workers-disruptive-economy/

Center for American Progress report on how "State and local policymakers have the power to raise standards for gig economy workers and independent contractors throughout the U.S. economy."

Source: Center for American Progress

Robots, Revenues & Responses: Ontario and the Future of Work (2016) CDN

https://munkschool.utoronto.ca/mowatcentre/robots-revenues-responses/

A look at what the increasingly digitally mediated nature of work – including the gig economy – means for the Ontario government's ability to raise revenue via taxation, and thereby fund government programs.

Source: Mowat Centre, School of Public Policy and Governance, University of Toronto

Sharing economy or on-demand service economy? CDN

A survey of workers and consumers in the Greater Toronto Area (2017)

https://www.policyalternatives.ca/sites/default/files/uploads/publications/Ontario%20Office/2017/04/CCPA-ON%20sharing%20economy%20in%20the%20GTA.pdf

This report presents the first in-depth snapshot of both workers and consumers who identify themselves as participating in the sharing economy in the Greater Toronto Area (GTA). Includes Toronto-specific data about the gig economy and microwork.

Source: Canadian Centre for Policy Alternatives

Shifting Perspectives: Redesigning Regulation for the Sharing Economy (2016) CDN

https://www.marsdd.com/wp-content/uploads/2016/04/MSL-Sharing-Economy-Public-Design-Report.pdf

Sharing economy regulation provides the larger frame for microwork.

Source: MaRS Discovery District

Signs of the Times: Expert insights about employment in 2030 (2019) CDN

https://brookfieldinstitute.ca/report/signs-of-the-times-expert-insights-about-employment-in-2030/

About: "A look at how a range of experts across Canada are thinking about the future of employment, as well as which trends they believe are most likely to create change."

Source: Brookfield Institute for Innovation and Entrepreneurship

Technology Trends (2017)

https://www.accenture.com/t20170321t032507__w__/us-en/_acnmedia/accenture/next-gen-4/tech-vision-2017/pdf/accenture-tv17-full.pdf?la=en

Big-picture overview of "marketplace" trends in labour organizations, extending from internal worker allocation to increasing dependence on outside platforms from traditioanl freelance through microwork.

Source: Accenture

The Changing Workplaces Review (2017) CDN

https://www.labour.gov.on.ca/english/about/workplace/

Final Report and Summary Report. The review proposes amendments to Ontario's Employment Standards Act, 2000 and Labour Relations Act, 1995. Contains 173 recommendations.

Source: Ontario Ministry of Labour

The Changing Workplaces Review – Chapter 4, Vulnerable Workers (2017) CDN

https://www.ontario.ca/document/changing-workplaces-review-final-report/chapter-4-vulnerable-workers-precarious-jobs

Specifically noting Chapter 4: Vulnerable workers in precarious jobs. Identifies and quantifies vulnerable workers in Ontario: "2,097,000 or 31.9 percent of the 6,571,000 workers in Ontario have a before-tax employment income that is less than half of the median individual before-tax employment income, and have made no contribution to a private registered pension plan nor are self-employed with paid help … We estimate that 30 to 32 percent of workers in Ontario are vulnerable according to these criteria."

Source: Ontario Ministry of Labour

The Characteristics & Experiences of individuals in the gig economy (2018)

https://www.employment-studies.co.uk/resource/experiences-individuals-gig-economy

Summary: "This report ... presents the findings from qualitative analysis of individuals working in the gig economy ... The report's findings highlight the diversity of the gig economy, both in terms of the individuals undertaking this kind of work and the work that they are doing."

Source: Institute for Employment Studies

The Generation Effect: Millennials, employment precarity and the 21st Century workplace (2018) CDN

https://pepso.ca/documents/the-generation-effect-executive-summary.pdf

The PEPSO research project is a joint university-community initiative led by United Way Toronto and York Region and McMaster University in partnership with over 30 university, community sector, labour, government and media partners developed to meet the need of data on trends in precarious employment and to encourage policy debate and further research.

Source: Poverty and Employment Precarity in Southern Ontario (PEPSO)

The Global Opportunity in Online Outsourcing (2015)

http://documents.worldbank.org/curated/en/138371468000900555/pdf/ACS14228-ESW-white-cover-P149016-Box391478B-PUBLIC-World-Bank-Global-OO-Study-WB-Rpt-FinalS.pdf

World Bank review of online outsourcing's potential role as driver of growth in developing countries: "This study focuses on [online outsourcing]'s potential as a new and innovative channel for socioeconomic development for developing country governments and development practitioners, particularly in terms of youth employment, services exports, and participation in the digital economy."

Source: World Bank

The Size and Characteristics of Informal ("Gig") Work in Canada (2019) CDN

http://conference.iza.org/conference_files/Statistic_2019/kostyshyna_o28235.pdf

ABSTRACT: "Underlying wage growth has fallen short of what would be consistent with an economy operating with little or no slack. While many factors could explain this weakness, the availability of additional labour resources from informal ("gig") work—not fully captured in standard measures of employment and hours worked—may play a role. We investigate this possibility through the Bank of Canada's Canadian Survey of Consumer Expectations (CSCE) …"

Source: Bank of Canada

The Talented Mr. Robot: The impact of automation on Canada's workforce (2016) CDN

https://brookfieldinstitute.ca/report/the-talented-mr-robot/

Brookfield report on automation's potential impact on Canadian jobs, positive and negative. This is a sector-based analysis of automation impact.

Source: Brookfield Institute for Innovation and Entrepreneurship

The three billion: Enterprise crowdsourcing and the growing fragmentation of work (2016)

https://www2.deloitte.com/content/dam/Deloitte/de/Documents/Innovation/us-cons-enterprise-crowdsourcing-and-growing-fragmentation-of-work%20(3).pdf

Study of enterprise-level crowdsourcing, reflective of consulting and respectable opinions.

Source: Deloitte

Toronto's Vital Signs report 2019 – Work Issue Area (2019) CDN

https://torontofoundation.ca/vitalsigns-issue-3/

Summary: "The Toronto Census Metropolitan Area has a population of 5.9 million, 3.5 million of whom are employed. Unemployment rates in Toronto are as low as they have been since 1990. At the same time, most new jobs are temporary or self-employed, providing no benefits and putting workers at high risk of poverty. Young people and newcomers are disproportionately finding themselves in these jobs, and for much of the last decade, income growth has been stagnant after inflation, increasing only after minimum wage increases were announced in 2017."

Source: Toronto Foundation

Towards a more equitable and inclusive gig economy (2019) CDN

https://cdn.gendereconomy.org/wp-content/uploads/2019/07/GATE_Gig_Economy_2019.pdf

Useful discussion of demographics and Canadian stats for workers in the "gig economy," including microworkers. The report connects the rise of microwork to the rise of precarious employment. An interesting finding: "the gig economy is more viable for people who are already financially secure". Provides a useful summary of research on how policy-makers can respond with policy and legislation changes.

Source: Institute for Gender and the Economy

Towards an Understanding of Workers in the Global Gig Economy (2018) CDN

https://www.glomhi.org/uploads/7/4/4/8/74483301/workers_in_the_global_gig_economy.pdf

General public health survey of platform labourers, with attempted classifications of key players and knowledge gaps. Makes specific mention of microwork and contributions from various local Canadian experts.

Source: Social Sciences and Humanities Research Council of Canada

Towards an understanding of workers'experiences in the global gig economy (2019)

https://www.glomhi.org/uploads/7/4/4/8/74483301/workers_in_the_global_gig_economy.pdf

Developments in online technology have transformed traditional labour markets by creating opportunities for people and businesses to participate in a larger-than-ever global marketplace for contract labour. Important findings on worker precarity: "Based on our scoping review, gig workers' health and social vulnerabilities can be divided into three overlapping categories: 1) occupational vulnerabilities, 2) precarity, and 3) platform-based vulnerabilities. While all three shape the experience of workers, we identified platform-based vulnerabilities as the biggest gap in understanding how this new form for global labour effects workers' right to health."

Source: Global Migration and Health Initiative

Turn and Face the Strange: Changes impacting the future of employment in Canada (2019) CDN

https://brookfieldinstitute.ca/report/turn-and-face-the-strange-changes-impacting-the-future-of-employment-in-canada/

Reports on a foresight exercise Brookfield conducted specifically about possible futures for Canadian employment in 2030.

Source: Brookfield Institute for Innovation and Entrepreneurship

Workforce of the Future: The competing forces shaping 2030 (2018)

https://www.pwc.com/gx/en/services/people-organisation/publications/workforce-of-the-future.html

PWC foresight-looking exercise, aimed at exploring the factors shaping future labour markets, drawing partly on a survey of 10,000 workers to gauge their views.

Source: PwC Global

Working Without a Net: Rethinking Canada's social policy in the new age of work (2016) CDN

https://munkschool.utoronto.ca/mowatcentre/wp-content/uploads/publications/132_working_without_a_net.pdf

Mowat Centre publication on the challenges posed by automation and platform casualization of work to Canada's social safety net, with recommendations for possible policy responses.

Source: Mowat Centre, School of Public Policy and Governance, University of Toronto

Research Articles

"Dependent Contractors" In the Gig Economy: A Comparative Approach (2016)

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2847869

Abstract: "Lawsuits around the misclassification of workers in the on-demand economy have ballooned in the United States in recent years. That is because employee status is the gateway to many substantive legal rights. In response, some commentators have proposed an in-between hybrid category just for for the gig economy.

Source: PlumX Metrics

2018 Canadian Internet Use Survey (2019) CDN

https://www150.statcan.gc.ca/n1/daily-quotidien/191029/dq191029a-eng.htm

Survey sponsored by Innovation, Science and Economic Development Canada. Conducted from November 2018 to March 2019. Information on the adoption and use of digital technologies by Canadians, including Internet use, household Internet access, demand for online activities and interactions online.

Source: Statistics Canada

A Data-Driven Analysis of Workers'Earnings on Amazon Mechanical Turk (2018)

https://www.cis.upenn.edu/~ccb/publications/data-driven-analysis-of-workers-earnings-on-amazon-mechanical-turk.pdf

A data-based assessment of AMT worker income: "We recorded 2,676 workers performing 3.8 million tasks on Amazon Mechanical Turk. Our task-level analysis revealed that workers earned a median hourly wage of only ~$2/h, and only 4% earned more than $7.25/h. The average requester pays more than $11/h, although lower-paying requesters post much more work."

Source: ACM

A Typology of Crowdwork Platforms (2018)

https://journals.sagepub.com/doi/full/10.1177/0950017018760136

Abstract: "... The aim of this positional piece is to provide a timely review and classification of crowdwork. A typology is developed to map the complexity of this emerging terrain, illuminating range and scope by critically synthesising empirical findings and issues from multidisciplinary literatures ..."

Source: SAGE Work Employment & Society

Algorithmic management and app-work in the gig economy: A research agenda for employment relations and HRM (2017)

https://onlinelibrary.wiley.com/doi/full/10.1111/1748-8583.12258

Abstract: "... Current understanding of what constitutes work in the growing gig economy is heavily conflated, ranging from conceptualisations of independent contracting to other forms of contingent labour. This article calls for a move away from problematic aggregations by proposing a classification of gig work into three variants, all based strongly upon key technological features: app-work, crowdwork, and capital platform work ..."

Source: Wiley Online Library

Beyond Mechanical Turk: An Analysis of Paid Crowd Work Platforms (2015)

https://www.ischool.utexas.edu/~ml/Research Articles/donna-iconf15.pdf

Review and comparison of crowdwork platforms, to combat conflation of all systems with AMT. Lit review of early analytic work on platforms, including Ipeirotis's concept of the "stack" (workforce + platform + application). Proposes a range of qualities on which platforms can be assessed.

Source: iConference 2015

Beyond Misclassification: The Digital Transformation of Work (2018)

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2734288

Abstract: "The first part of this article provides a brief litigation update on various worker lawsuits within the gig economy ... The second part of the article shifts from the doctrinal issues around misclassification to look at broader trends, arguing that we are currently experiencing a far-reaching digital transformation of work."

Source: ISLSSL conference in Torino

Crowdsourcing in biomedicine: challenges and opportunities (2016)

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4719068/

Review of crowdsourcing practices in biomedicine, including various applications drawing on MTurk and associated platforms for study methodology.

Source: Briefings in Bioinformatics

Data on The Sharing & On-Demand Economy: What We Know and Don't Know (2016)

https://assets.aspeninstitute.org/content/uploads/2016/10/research_agenda-2.pdf

Summary: "Until 2015, we knew very little about the work and workers in the sharing/on-demand economy ...This Research Article is meant to be a resource for public and private research organizations, foundations, government agencies, and other parties interested in promoting a more thorough understanding of the sharing/on-demand economy workforce, including its relationship to the broader contingent workforce."

Source: Aspen Institute, Future of Work Initiative

Demographics and Dynamics of Mechanical Turk Workers (2018)

https://xvlva38b5va1oid8r6x98g6a-wpengine.netdna-ssl.com/wp-content/uploads/2017/12/wsdmf074-difallahA.pdf

Conference Research Article on large-scale platform worker population analysis via rolling surveys. Author Panagiotis is a leading B-school scholar of platform outsourcing, and this Research Article (along with his others) provides substantial insight into microwork.

Source: Proceedings of WSDM 2018: The Eleventh ACM International Conference on Web Search and Data Mining

Digital labour and development: impacts of global digital labour platforms and the gig economy on worker livelihoods (2017)

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5518998/

Abstract: "... Drawing on a multi-year study with digital workers in Sub-Saharan Africa and South-east Asia, this article highlights four key concerns for [platform] workers: bargaining power, economic inclusion, intermediated value chains, and upgrading ..."

Source: National Center for Biotechnology Information

Fair Work: Crowd Work Minimum Wage with One Line of Code (2018)

https://hci.stanford.edu/publications/2019/fairwork/fairwork-hcomp2019.pdf

Abstract: "Accurate task pricing in microtask marketplaces requires substantial effort via trial and error, contributing to a pattern of worker underpayment. In response, we introduce Fair Work, enabling requesters to automatically pay their workers minimum wage by adding a one-line script tag to their task HTML on Amazon Mechanical Turk ..."

Source: Stanford Computer Science

Global Sourcing of Business Processes: History, Effects, and Future Trends (2018)

https://www.researchgate.net/publication/312620905_Global_Sourcing_of_Business_Processes_History_Effects

Abstract: "... three new trends are introduced-the emergence of global delivery models, information technology-enabled service automation, and impact sourcing-and discuss future directions for research."

Source: Global Sourcing of Business Processes: History, Effects, and Future Trends.

Good Gig, Bad Gig: Autonomy and Algorithmic Control in the Global Gig Economy (2019)

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6380453/

Perceptions of "job quality" among platform workers, using both semi-structured interviews and surveys focused on Southeast Asia and Sub-Saharran Africa.

Source: SAGE Work Employment & Society

How many people microwork in France? Estimating the size of a new labor force (2019)

https://arxiv.org/abs/1901.03889

Summarizes the result of a multi-method study attempting to capture microworkers active in France, from platform API pulls to surveys and website activity, and classify their degrees of participation.

Source: DiPLab

Labour market effects of crowdwork in the US and EU: an empirical investigation (2018)

http://155.185.68.2/campusone/web_dep/RecentResearch Article/recent-wp140.pdf

A comparison of ILO survey data on microworkers to otherwise comparable workers in other standard labour force surveys, to determine how microwork affects compensation, etc.

Source: RECent, Centre for Economic Research

Mercury: Empowering Programmers' MobileWork Practices with Microproductivity (2019)

https://acw.io/pubs/uist2019-mercury.pdf

Abstract: "… introduce Mercury, a system that guides programmers in making progress on-thego with auto-generated microtasks derived from their source code's current state. A study of Mercury with 20 programmers revealed that they could make meaningful progress with Mercury while mobile with little effort or attention …"

Source: ACM Tech News

Research Article

Micro-work, artificial intelligence and the automotive industry (2019)

https://link.springer.com/article/10.1007/s40812-019-00121-1

A Research Article arguing from automotive industry data that microwork will come to occupy a permanent structural role in economies and supply chains increasingly powered by AI.

Source: Journal of Industrial and Business Economics volume

More Than Money: Correlation among Worker Demographics, Motivations, and Participation in Online Labor Market (2019)

https://www.aaai.org/ojs/index.php/ICWSM/article/view/3216/3084

Abstract: "… analyze survey responses from 1700 people working across four different online labor platforms to understand: What motivates people to participate in online labor markets and how do individual motives correspond to larger demographic patterns and structural dynamics that more broadly shape traditional employment opportunities? Our results show that age, gender, education, and number of income sources help explain who does on-demand work, when they do it, and why. Even more striking, these broader social dimensions of work correlate with when and why individuals work across multiple on-demand platform companies …"

Source: Proceedings of the Thirteenth International AAAI Conference on Web and Social Media (ICWSM 2019)

Of crowds and talents: discursive constructions of global online labour (2018)

https://onlinelibrary.wiley.com/doi/abs/10.1111/ntwe.12104

Text analysis of worker self-presentation across multiple platforms.

Source: Wiley Online Library

On-Demand Digital Economy: Can Experience Ensure Work and Income Security for Microtask Workers? (2019)

https://www.researchgate.net/publication/331744337_On-
Demand_Digital_Economy_Can_Experience_Ensure_
Work_and_Income_Security_for_Microtask_Workers

Abstract: "... This Research Article explores the extent to which the seemingly flexible platform work ensures work and income security and provides opportunities for skill development for workers with different levels of experience, based on novel survey data collected on five globally operating microtask platforms and in-depth interviews with workers ..."

Source: Jahrbücher für Nationalökonomie und Statistik.

Online Labour Index: Measuring the Online Gig Economy for Policy and Research (2018)

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3236285

Summary of researchers' key findings to date via the Online Labour Index, noting not just numbers but important trends such as the development of "white glove" services that don't generate open platform vacancies, and so remain relatively invisible.

Source: Technological Forecasting and Social Change

Precarious and Productive Work in the Digital Economy (2017)

https://journals.sagepub.com/doi/10.1177/002795011724000110?

Abstract: "... To reshape policies in order to protect the interests of people as workers as well as consumers, it is important to understand why digital innovators make the choices they do, and therefore how labour market policies can improve working conditions without constraining the productivity and consumer benefits enabled by digital business models."

Source: SAGE National Institute Economic Review

Pushed and Pulled to the Internet: Self Employment in the Spiritual Marketplace (2018)

https://journals.sagepub.com/doi/10.1177/0002764218794768

Abstract: "Drawing from participant observation and in-depth interviews, this article illustrates how esoteric practitioners (mainly Tarot card readers) come to see themselves as "self-employed" or entrepreneurs and take up the labor of brand building …"

Source: American Behavioural Scientist

Regulating work in the gig economy: What are the options? (2017)

https://journals.sagepub.com/doi/10.1177/1035304617722461?icid=int.sj-full-text.similar-articles.2

Abstract: "…This article reviews the extent of this type of work in Australia, and its main characteristics. It then considers the applicability of existing employment regulations to these 'gig' jobs, citing both Australian and international legislation and case law …"

Source: SAGE The Economic and Labour Relations Review

Subcontracting Microwork (2017)

https://www.jonathanbragg.com/files/morris-chi17.pdf

Abstract: "Mainstream crowdwork platforms treat microtasks as indivisible units; however, in this article, we propose that there is value in re-examining this assumption.We argue that crowdwork platforms can improve their value proposition for all stakeholders by supporting subcontractingwithin microtasks …"

Source: CHI '17: Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems

The duality of empowerment and marginalization in microtask crowdsourcing: Giving voice to the less powerful through value-sensitive design (2016)

https://pdfs.semanticscholar.org/aaa6/e0137911a8ee547c8db23ba479832b77245b.pdf

Abstract: "... Analyzing detailed narratives of 210 crowd workers participating in Amazon's Mechanical Turk (MTurk), we uncover a set of nine values they share: access, autonomy, fairness, transparency, communication, security, accountability, making an impact, and dignity. We find that these values are implicated in four crowdsourcing structures: compensation, governance, technology, and microtask. Two contrasting perceptions – empowerment and marginalization – coexist, forming a duality of microtask CS [crowdsourcing] ..."

Source: MIS Quarterly Vol. 40

The Global Platform Economy: A New Offshoring Institution Enabling Emerging-Economy Microproviders (2018)

https://journals.sagepub.com/doi/full/10.1177/0149206318786781

Abstract: "... How do these microproviders survive and thrive? We theorize global platforms through transaction cost economics (TCE), arguing that they are a new technology-enabled offshoring institution that emerges in response to cross-border information asymmetries that hitherto prevented microproviders from participating in offshoring markets. To explain how platforms achieve this, we adapt signaling theory to a TCE-based model and test our hypotheses by analyzing 6 months of transaction records from a leading platform ..."

Source: SAGE Journal of Management

The health of workers in the global gig economy (2018)

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6299501/

Commentary based on other research by the authors, surveying the potential impacts of platform work on workers' physical/mental health and wellbeing. This specifically cites microwork as a class under consideration, with a good review of potential concerns.

Source: Global Health

The Perpetual Work Life of Crowdworkers: How Tooling Practices Increase Fragmentation in Crowdwork (2019)

https://acw.io/pubs/cscw2019-tooling-practices.pdf

Findings from an interview study (N=21) aimed at exploring the tooling practices used by full-time crowdworkers on Amazon Mechanical Turk. Interview data suggests that the tooling utilized by crowdworkers: (1) strongly contributes to the fragmentation of microwork by enabling task switching and multitasking behavior; (2) promotes the fragmentation of crowdworkers' work-life boundaries by relying on tooling that encourages a 'work-anywhere' attitude, and (3) aids the fragmentation of social ties within worker communities through limited tooling access.

Source: Proc. ACM Hum.-Comput. Interact.

The power of crowds (2016)

https://science.sciencemag.org/content/351/6268/32

A review of recent "human computation" projects that harness widely distributed microtasks for (often socially) positive ends, proposing that they might provide a way of tackling "wicked" problems like climate change.

Source: Science

The resurgence of gig work: Historical and theoretical perspectives (2017)

https://journals.sagepub.com/doi/10.1177/1035304617724303?

Abstract: " ... This article provides historical and theoretical perspective on the expansion of digitally mediated work, to better understand the range of forces (technological, economic and socio-political) at work. It shows that the major features of platform work were all visible in earlier periods of capitalism, but they became less prominent with the rise of the 'standard employment relationship' in the 20th century ..."

Source: The Economic and Labour Relations Review

The Turker Blues: Hidden Factors Behind Increased Depression Rates Among Amazon's Mechanical Turkers (2020)

https://journals.sagepub.com/doi/full/10.1177/2167702619865973

Experiences depend heavily on whether or not the individuals are carrying out the work as their main source of income. In particular, if it is their main source of income, the report suggests that they are potentially vulnerable to fluctuations in working time and therefore pay levels, short notice of working schedules, and a degree of precariousness in terms of a lack of employment rights.

Source: SAGE Clinical Psychological Science

The Value of Flexible Work: Evidence from Uber Drivers (2017)

https://www.nber.org/Research Articles/w23296.pdf

An analysis of 200K anonymous Uber drivers' working patterns, which attempts to identify the value of flexible hours to workers by comparing when they work and for how much over time.

Source: National Bureau of Economic Research

TurkScanner: Predicting the Hourly Wage of Microtasks (2019)

https://www.cs.cmu.edu/~jbigham/pubs/pdfs/2019/turk-scanner.pdf

Conference Research Article describing a mainly Waseda-based CS team's efforts to develop a tool that would let AMT microworkers project their hourly wage from projects.

Source: WWW '19, May 13–17, 2019, San Francisco, CA, USA

Understanding Trends in Alternative Work Arrangements in the United States (2019)

https://www.nber.org/papers/w25425

This study uses administrative data to look at Amazon Mechanical Turk use.

Source: NBER Working Paper No. w25942

Valuing Alternative Work Arrangements (2016)

https://www.nber.org/Research Articles/w22708

Economic research that includes questions about the value of flexibility in a job application process for 7,000 people, gauging how much "flexibility" was worth to them versus simple predictibility. Result reflect what people actually look for in work, versus relying on revealed preference.

Source: National Bureau of Economic Research

Thesis

Microtask Design: Value, Engagement, Context, and Complexity (2018)

https://www.repository.cam.ac.uk/handle/1810/271782#

A dissertation on microworker motivation, with survey component.

Source: Cambridge University

Microwork: Theory, Models and Mechanics for enabling impact through aggregate action (2016) CDN

http://openresearch.ocadu.ca/id/eprint/1533/

Enabling impact through aggregate action.

Source: OCAD University

Peeking into the On-Demand Economy: Crowd Behavior and Incentive Design (2017)

http://econcs.seas.harvard.edu/files/econcs/files/thesis_yin.pdf

A Harvard computer science thesis, submitted by one of Suri's grad students, based on AMT surveys and experiments. It's about the motivation of microworkers, and optimal microtask design.

Source: Harvard University

Websites

CIFAR Pan-Canadian Artificial Intelligence Strategy (2019) CDN

https://www.cifar.ca/ai/pan-canadian-artificial-intelligence-strategy

Description of CIFAR's role in coordinating the federal government's $125m investment in AI research. AI/ML interactions with microwork, and the government's role in supporting leading-edge research, including at Tornto's Vector Institute.

Source: CIFAR

Fair Crowd Work (current)

http://faircrowd.work/

Union-supported website that features background and ratings of different microtask platforms from a worker perspective, plus calls for unionization.

Source: Fair Crowd

Fairwork (current)

https://fair.work

Website featuring ratings of platforms, so far in the developing country, and new research by the Fairwork Foundation.

Source: Fairwork Foundation

Gig Economy Data (2018)

https://www.gigeconomydata.org/

On-demand platforms. Freelancers. Precarious work. The "Gig Economy." What do these terms mean? How is work actually changing? Find answers to key questions regarding the size, makeup, and challenges of gig workers here.

Source: Cornell University & Aspen Insititute

The Future of Work Transition Agenda (2017)

https://www.oecd.org/employment/future-of-work/

The Future of Work (and Transition Agenda) – OECD. A critical reference featuring many relevant reports and key data.

Source: OECD

The Online Labour Index (current)

https://ilabour.oii.ox.ac.uk/online-labour-index/

A tool that provides realtime and historical views of supply and demand for "online freelance labour" (ranging from web development to microwork) on the 5 largest platforms, by geography: it'll let you see what kinds of work are distributed where.

Source: Oxford Internet Institute