

Raphael Mu

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Experience

University Tutor, UNSW

Sydney, Australia

Sep 2022 – Dec 2022

- Taught seminars for ECON3123 Organisational Economics, a final-year course on the game-theoretic analysis of principal-agent contracts (under **Dr. Hongyi Li**)

Financial Engineer (Contract), Adamantem Capital

Sydney, Australia

Jun 2022 – Dec 2022

- Developed an equity strategy giving competitive returns
- Technologies used: *Julia*

Research Assistant, UNSW

Sydney, Australia

Jun 2021 – Dec 2022

- Developed mechanisms and smart contracts to counteract moral hazard in teams (**Prof. Richard Holden**), blockchain front-running, and misreporting in blockchain validation (**Prof. Richard Holden, Prof. Joshua Gans**)
- Applied machine learning techniques for covariate selection in high-dimensional sparse models to predict educational attainment (**Prof. Richard Holden**)
- Developed a companion Android application for subjects in a study on the effects of smartphone usage on mental health and academic achievement (**Prof. Jane Zhang**)
- Technologies used: *STATA, Solidity, Kotlin, TypeScript, PostgreSQL*

Cofounder and Scientist, Atoms.org

Remote

May 2021 – Present

- Building a peer review protocol to improve transparency and incentive alignment in scientific validation
- Built a platform to retroactively crowdfund scientific research
- Given \$230k USD in grants from the Ethereum Foundation and Protocol Labs
- Technologies used: *Solidity, React, TypeScript, GraphQL*

Software Consultant (Contract), ContactOut

Sydney, Australia

Jan 2021 – Apr 2021

- Conducted technical interviews for CTO and Engineer roles
- Advised engineering team on technical design and process

Software Engineer, Atrium LTS

San Francisco, USA

Aug 2017 – Jul 2018

- Developed software to automate corporate and legal services
- Technologies used: *Ruby on Rails, Vue, React, TypeScript, GraphQL*

Software Engineer (Intern), Stripe

San Francisco, USA

Jan 2017 – Jul 2017

- Worked on RunKit, a browser-based Node.js prototyping tool
- Technologies used: *JavaScript, React, AWS, PostgreSQL*

Software Engineer, Filter News

Silver Spring, USA

Sep 2015 – Apr 2016

- Developed a Twitter-based news aggregator
- Technologies used: *JavaScript, React, Fluxette, PostgreSQL*

Open Source Software Developer

Remote

Feb 2014 – Present

- Founded *fluxette, cyc*, contributed significantly to *Inferno.js, t7*
- Submitted patches and issues to projects in various web development ecosystems

Education

MSc Econometrics and Mathematical Economics, LSE

London, UK

Aug 2023 – Present

- Relevant Coursework:
 - Advanced Microeconomics
 - Advanced Macroeconomics
 - Econometric Analysis
 - Contracts and Organisations

BSc Economics, UNSW Sydney

Sydney, Australia

Feb 2020 – Dec 2022

- 86 WAM (High Distinction)
- Relevant Coursework:
 - Game Theory and Business Strategy
 - Applied Econometric Methods
 - Higher Theory of Statistics
 - Higher Linear Algebra
 - Applied Real and Functional Analysis

Diploma, Bradfield School of Computer Science

San Francisco, USA

Sep 2016 – Nov 2016

- Software engineering fellowship with 10-week upper-division-level computer science intensive

Awards

The Dean's Award

UNSW Sydney

2022

- For scoring in the top 3% of students at UNSW Business School

Productivity Commission Prize

UNSW Sydney

2022

- For the best performance in ECON3101/ECON5301 Markets and Frictions

People's Choice Award

BEST Centre, QUT

2022

- For the most popular behavioral economics intervention at Nudgeathon 2022
<https://research.qut.edu.au/best/news-events/events/nudgeathon-2022/>

Research Assistance

Gans, Joshua and Holden, Richard, Mechanism Design Approaches to Blockchain Consensus (June 2022). NBER Working Paper No. w30189, Available at SSRN: <https://ssrn.com/abstract=4147259>

Gans, Joshua and Holden, Richard, A Solomonic Solution to Ownership Disputes: An Application to Blockchain Front-Running (February 14, 2022). Rotman School of Management Working Paper No. 4034666, Available at SSRN: <https://ssrn.com/abstract=4034666> or <http://dx.doi.org/10.2139/ssrn.4034666>

Invited Talks

UNSW Economics Society

- **Mechanism Design on the Blockchain (2022)**
Based on Gans & Holden (2022)
<https://www.youtube.com/watch?v=xSg6XmZTcus>
- **Ethics and Economics (2021)**
- **Neurometrics and Mechanism Design (2021)**
Based on Krajbich, Camerer, Ledyard & Rangel (2009)
- **Asymptotically Efficient and Stable Matching (2021)**
Based on Che & Tercieux (2015)
- **The Political Economy of Hatred (2020)**
Based on Glaeser (2005)

React DC

- **Functional Flux (2015)**
<https://www.meetup.com/react-dc/events/225100287/>

Technical Skills

Languages: Julia, Python, JavaScript/TypeScript, PostgreSQL/MySQL, R, Solidity, Kotlin, Haskell, LISP, C/C++, Java, C#, Visual Basic, Assembly, Ruby, HTML, CSS, GraphQL

Software: STATA, Git, AWS, UNIX, Docker, ArcGIS/QGIS