

Coen D. Needell

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Education

- 2019 – 2021 **Master of Arts in Computational Social Science**, *University of Chicago*, Chicago, IL,
GPA: 3.77.
Focus in Computational Methods and Cultural Patterns. In Progress.
- 2015 – 2019 **Bachelor of Arts in Economics and Physics**, *Washington University in St. Louis*, St. Louis, MO,
GPA: 3.41.
Minor in the Philosophy of Science

Experience

- 2019 – **Freelance Data Scientist**, *Upwork*, St. Louis, MO and Chicago, IL.
Offered freelance data analysis services to companies. Projects include building systems for automatic time-series analysis, data visualization and analysis, natural language processing analysis of surveys, and consulting on larger projects.
Jobs Include:
 - Interviewing Potential Full-Time Data Scientists
 - Building Statistical Learning Tools
 - Natural Language Processing Analysis
 - Machine Learning Development and Deployment
- 2018 **Programmer/Data Scientist (Internship)**, *Washington University in St. Louis: Alumni and Development*, St. Louis, MO.
Continued development of previous non-scientific automation. Created new data models for donor identification. Other data analysis and visualization projects.
- 2017 **Real Estate Analyst (Internship)**, *Kairos Investment Management*, Rancho Santa Margarita, CA.
Wrote automation programs for data processing, and constructed a model for optimal rent estimation. Built data mining programs for continued use by analysts.
- 2016 – 2017 **Economics Simulation Programmer**, *Washington University in St. Louis: Department of Economics*, St. Louis, MO.
Built macroeconomic simulations for teaching of Economics 4121. Wrote simulations in Mathematica for the ISLMFE model, the Solow-Swan model, and permutations thereof.

Selected Projects

- 2019 – 2020 **Ongaku**.
A system for creating musical playlists based on feature analysis. Leverages gammatone cepstral coefficients (a system for mimicking neural signals from the ear to the brain) and manifold learning techniques to create a pseudo-euclidean space for musical tracks. Shapes in the song-space can then be drawn to define playlists.
- 2019 **Fluxx for Robots**.
An Artificial Intelligence Learning environment for the tabletop card-game Fluxx by Looney Labs. Has both a human-motivated interface and a machine-motivated interface. Intended for research on machine learning methods for complex and incomplete-information games.
- 2019 – **Tales and Things**.
An ongoing short fiction collection focusing on philosophical and existential narratives.

Skills

Econometric Models

Physics

Machine Learning

Data Scraping

Epistemology

Systems Analysis

Philosophy of Science

Natural Language Processing

Network Analysis

Sociology

Advanced Mathematics

Data Visualization

Data Mining

Statistics and Statistical Learning

Biology