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Coen D. Needell

Education

2019 – 2021 **Master of Arts in Computational Social Science**, *University of Chicago*, Chicago, IL, GPA: 3.72.
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 psuedo-euclidean space for musical tracks. Shapes in the song-space can then be drawn to define playlists.

2019 **Fluxx for Robots**.
An Artifical 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.

2020 **Bandcamp Album Covers**.
A project to investigate how indie musicians use visual signs to indicate their subgenre. Leverages Natural Language Processing techniques like Latent Dirichlet Allocation to analyze color usage in album cover images.

Skills

Econometric Models	Systems Analysis	Advanced Mathematics
Physics	Philosophy of Science	Data Visualization
Machine Learning	Natural Language Processing	Data Mining
Data Scraping	Network Analysis	Statistics and Statistical Learning
Epistemology	Sociology	Biology