Joseph Knox

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EDUCATION

UNIVERSITY OF WASHINGTON
M.S. in Applied Mathematics
June 2018 | Seattle, WA

UNIVERSITY OF WASHINGTON
B.S. in Industrial Engineering
Minor in Applied Mathematics
June 2016 | Seattle, WA

SKILLS

TECHNICAL
Languages: Python •C •PhP/Hack •R
ML libs: SkLearn •XGBoost •PyTorch
DB (SQL): Presto •Hive •MySQL •Spark
Systems: Linux (Arch, Debian) •Docker

OPEN SOURCE

MCMODELS | Maintainer
2017 – 2018 | Python
Python library for mesoscopic full-brain connectivity models in mouse – built on top of the AllenSDK and Scikit-Learn APIs.

RISTRETTO | Primary Contributor
2018 | Python
Randomized matrix factorization library written in Python (numpy).

Contributer to
- Allensdk
- Scikit-learn

COURSEWORK

GRADUATE
Statistical Computing
Combinatorial Optimization
Computational Neuroscience
Statistical Analysis of Social Networks
Computational Methods - Data Analysis

UNDERGRADUATE
Machine Learning
Stochastic Modeling/Decision Analysis
Linear and Network Programming
High-Performance Scientific Computing

SUMMARY

I am a Data Scientist with 3+ years of experience driving business impact through research, analytics, and engineering. Throughout my diverse work experience, I have identified, communicated, and solved various levels of problems with close collaboration with cross-functional partners.

EXPERIENCE

FACEBOOK — Data Scientist
Sept 2018 - Present · 1 yr 11 mos — San Francisco, CA
- Own analytic strategy focused on Instagram SMB advertiser value
- Identify product gaps and market opportunities, working with many cross-functional partners to influence product and marketing roadmaps
- Build end-to-end ML models to predict advertiser churn and retention lift
- Build and contribute to internal tools streamlining data visualization, ML modeling, and experimentation measurement
- Write data pipelines to support analysis, internal tools, and external personalized marketing campaigns

ALLEN INSTITUTE FOR BRAIN SCIENCE — Data Analyst
June 2017 - Sept 2018 · 1 yr 4 mos — Seattle, WA
- Develop and implement novel models for full-brain connectivity
- Analyze heterogeneous, multi-scale experimental data
- Contribute to organizational open source software packages
- Research statistical, graph theoretic models of brain connectivity

RATLAB LLC — Research Intern
July 2016 – Jan 2017 · 7 mos — Seattle, WA
- Designed and conducted experiments for product R&D
- Optimized hardware design through the use of statistical ML techniques

COLLEGE WORKS PAINTING — Manager
Feb 2015 – Sept 2015 · 8 mos — Seattle, WA
- Acted as project manager sourcing clients and creating estimates for management of monetary funds
- Planned production schedule and successfully coordinated all projects, interacting with clients daily and ensured customer satisfaction
- Recruited, hired, and trained 3 employees

SELECT PUBLICATIONS

[1] J. A. Harris, S. Mihalas, et al. Hierarchical organization of cortical and thalamic connectivity. *Nature*, 575(7781):195–202, 2019.

[2] J. E. Knox, K. D. Harris, et al. High-resolution data-driven model of the mouse connectome. *Network Neuroscience*, 3(1):217–236, 2019.

[3] J. D. Whitesell et al. Whole brain imaging reveals distinct spatial patterns of amyloid beta deposition in three mouse models of alzheimer's disease. *Journal of Comparative Neurology*, 527(13):2122–2145, 2019.