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

PROGRAMMING
Advanced: Python
Intermediate: R •C • SQL • MATLAB
Novice: C++ • Java • OpenMP/MPI Bash/sh

PROJECTS

MCMODELS | Maintainer
Dec 2017 – | Python
Python library for mesoscopic full-brain connectivity models in mouse.

RISTRETTO | Primary Contributor
April 2018 - | Python
Randomized matrix factorization library written in Python.

Contributer to
- Allensdk
- Scikit-learn

COURSEWORK

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

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

SUMMARY

A Bachelor of Industrial Engineering and a Master of Applied Mathematics with 1+ years researching statistical, graph theoretic models of brain connectivity. Throughout my diverse work experience I have to identified, communicated, and solved various levels of problems through research, engineering, and with close collaboration with my teamates. I am a driven learner who thrives working with equally driven groups of researchers, engineers, and business-focused professionals. My goal is to use my applied problem solving abilities to impact the core business of the company I work for, and have fun learning in the process.

EXPERIENCE

ALLEN INSTITUTE FOR BRAIN SCIENCE | Data Analyst
June 2017 - Present | Seattle, WA
- Develop and implement novel models for full-brain connectivity
- Analyze heterogeneous, multi-scale experimental data
- Contribute to organizational open source software packages

RATLAB LLC | Research Intern
July 2016 – Jan 2017 | Seattle, WA
- Designed and conducted experiments for product research and development
- Optimized hardware design through the use of statistical machine learning techniques

COLLEGE WORKS PAINTING | Manager
Feb 2015 – Sept 2015 | Seattle, WA
- Acted as project manager creating estimates and invoices 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

AMERICAN EXCELSIOR CO. | Operator
Jul 2014 – Sept 2014 | Yakima, WA

KD&S ENVIRONMENTAL | Class One Asbestos Abater
Jul 2013 – Sept 2013 | Yakima, WA

ALLAN BROTHERS, INC. | Scale Manager
Jun 2012 – Aug 2012 and Jun 2013 - Jul 2013 | Naches, WA

PUBLICATIONS

[1] J. A. Harris, S. Mihalas, K. E. Hirokawa, J. D. Whitesell, J. Knox, A. Bernard, P. Bohn, S. Caldejon, L. Casal, A. Cho, D. Feng, N. Gaudreault, N. Graddis, P. A. Groblewski, A. Henry, A. Ho, R. Howard, L. Kuan, J. Lecoq, J. Luviano, S. McConoghy, M. Mortrud, M. Naeemi, L. Ng, S. W. Oh, B. Ouellette, S. Sorensen, W. Wakeman, Q. Wang, A. Williford, J. Phillips, C. Koch, and H. Zeng. The organization of intracortical connections by layer and cell class in the mouse brain. *bioRxiv*, 2018.

[2] J. E. Knox, K. D. Harris, N. Graddis, J. D. Whitesell, H. Zeng, J. A. Harris, E. Shea-Brown, and S. Mihalas. High resolution data-driven model of the mouse connectome. *bioRxiv*, 2018.