# 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
**Fluent:** • Python • LaTeX
**Conversational:** • C • Bash/sh • SQL

## PROJECTS

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

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

### Contributer to
- Allensdk
- Scikit-learn

## COURSEWORK

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

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

## EXPERIENCE

### ALLEN INSTITUTE FOR BRAIN SCIENCE | Data Analyst
June 2017 - Present | Seattle, WA
- Develop and implement novel models for full-brain connectivity
- Aid scientists with the analysis of heterogeneous, mutliscale 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

## 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.