Will Wright

Contact

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GitHub: https://github.com/will-wright

Education

PhD Mathematics - University of California, Davis — August 2019
Dissertation: *A Rapid Eigenvalue Method for Noisy Phase Retrieval*
Specializations:
- Large-scale numerical methods (e.g., *sparse linear algebra*)
- Machine learning / deep learning applications (e.g., *CNNs in TensorFlow*)
- Nonlinear and convex optimization

2015-2016 - SIAM Student Chapter President

MS Applied Math - California State University, East Bay — June 2013
2012 - Tracewell Scholarship
2011 - Sabharwal Scholarship

MA Teaching - Concordia University, Portland OR — June 2009

BS Political Science & Philosophy - Penn State — Dec 2006

Internship

Researcher & Software Engineer - Apple — June - Dec 2016
- prototyped optimization methods
- contributed performance-critical C++ code to team repository

Professional Experience

Assistant Instructor - California State University, East Bay — 2011 - 2013
Middle School Teaching - Academy of Alameda, Alameda CA — 2010 - 2011
High School Teacher - Delta Academy, Antioch CA — 2009 - 2010
Underwriter - Farmers Insurance, Portland OR — 2007 - 2008

Research Projects

Image Segmentation

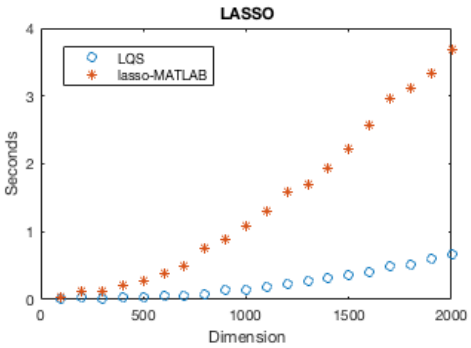

- developed a *faster algorithm* than the *original algorithm*
- developed a *new sparse method* for adjacency matrix, requiring $\mathcal{O}(\text{pixels})$ ops vs $\mathcal{O}(\text{pixels}^2)$ in *scikit-image*

Signal/Image Processing: Phase Retrieval Denoising via Nonlinear Regression

- developed *adaptive hyperparameter selection method* based on *grid search strategy*
- *decreased costs and runtime* by 50-90% for a recent *phase retrieval algorithm*
- demonstrated this algorithm is *more accurate* than a highly-cited *competitor algorithm*

LASSO Regularization, Quadratic Programming

- *Qualifying exam proposal* proved the equivalence of two recent methods (*smoothing* and *Lagrangian*)
- *demonstrated* this method (LQS, right) scales better than built-in MATLAB software



Software Skills

Experienced MATLAB, Python
Intermediate C++, Git, *TensorFlow*, scikit-learn, Julia

Interests

Running, brewing beer, boardgames, guitar, audiobooks and podcasts (e.g., the Expanse, Stormlight Archive, Freakonomics)