

# Andrew Giessel

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## EDUCATION

**Harvard Medical School (Boston, MA)** **2010**  
Ph.D., Neuroscience  
Advisor: Dr. Bernardo Sabatini  
Thesis: *Local, Non-linear Regulation of Synaptic Signals at Dendritic Spines of CA1 Pyramidal Cells.*

**University of Kansas (Lawrence, KS)** **2005**  
B.S., Biochemistry  
B.S., Computer Science

## WORK AND RESEARCH EXPERIENCE

**Director of Data Science, SenseAI** **2015-present**  
Responsible for framework development and analysis of large-scale crowd-sourced geospatial mobile sensor data. Developer of resulting data products. Built and maintains the analytic platform of SenseAI. Perform analytics supporting high-level product and company strategy. Work with a team to design and conduct R+D on derived mobile sensors, train statistical models and deploy to the cloud using a custom predictive framework.

**Postdoctoral Research Fellow, Harvard Medical School** **2011-2015**  
Managed a team of graduate and undergraduate students. Wrote a suite of advanced imaging, signal analysis and machine learning software in Python ([http://github.com/dattalab/d\\_code](http://github.com/dattalab/d_code)) to analyze large-scale neuroimaging data. Pioneered a first-of-it's-kind surgery preparation for *in vivo* electrophysiology, two-photon laser scanning microscopy and optogenetics to investigate sensory coding in the mouse olfactory striatum.

**Ph.D. Student, Harvard Medical School** **2006-2010**  
Used a combination of *in vitro* electrophysiology and advanced microscopy to investigate synaptic biophysics in the mouse hippocampus. Digital signal processing and time-series analysis of results. Mathematical modeling of bioelectrical feedback circuits. Built custom microscope hardware and software (MATLAB) to conduct experiments.

## SKILLS

**Languages:** Expert: Python, MATLAB. Strong: R, Java, Javascript, C/C++. Proficient: Scala, Ruby, Clojure.

**Big Data Analytics:** Apache Spark, Map Reduce, MPI and other parallel programming approaches.

**Quantitative:** Strong Statistics and Machine Learning background (logistic regression, SVM, decision trees and ensemble methods, PCA/ICA). Digital Signal Processing (digital sampling, FFTs, filtering). Mathematical modeling via differential equations.

**Databases:** NoSQL (MongoDB, DynamoDB), SQL, Oracle.

**DevOps and Cloud Computing:** Extensive Linux background. AWS Ecosystem including EC2, Opsworks/Chef, S3. Strong git/github skills.

## **TEACHING EXPERIENCE**

- PyData Boston**, Workshop Leader **2013**  
Ran a workshop for beginners on NumPy, the scientific Python library.
- Harvard Medical School**, Teaching Fellow **2009**  
Neuroscience survey course for first-year graduate students and second year medical students.

## **ACADEMIC AWARDS AND FELLOWSHIPS**

- Nancy Lurie Marks Postdoctoral Fellow** **2013-2015**
- Departmental NIH National Research Service Award** **2011-2012**
- Pre-Doctoral NIH Ruth L. Kirschstein National Research Service Award** **2009-2010**
- Student Travel Award, International Brain Research Organization** **2008**

**PEER-REVIEWED PUBLICATIONS AND TALKS:** List available upon request.

**REFERENCES:** Happily provided upon request.