Teaching humans is more fun than teaching machines...

Jonathan Dinu

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Education

Ph.D. Computer Science (withdrawn), Carnegie Mellon University, 2016-2019
Human-Computer Interaction Institute, Advisor: Zico Kolter

B.A. Computer Science and Physics, UC Berkeley, 2007—2011

Professional Experience

Machine Learning Engineer Intern, Udacity
San Francisco, California, June 2017 — Aug 2017

Worked with the Head of AI and Data to develop a just-in-time support tool to assist tutors in responding to ad-hoc student questions. Built a human-in-the-loop machine learning system that used neural embeddings and existing knowledge bases to interactively surface semantically similar questions.

VP of Academic Excellence, Galvanize, Inc.
San Francisco, California, Nov 2014 — Dec 2015

Served as one of the educational leaders of the company, focusing on how to make their programs more accessible while maintaining the highest academic standards. Cultivated a culture of growth and creativity through continuing education and teacher training for the instructor team. Promoted the vision of the company through public speaking appearances at conferences and events.

Founder and CTO/CAO, Zipfian Academy (zipfian.academy), acquired by Galvanize
San Francisco, California, Apr 2013 — Nov 2014

Created an industry focused (and outcomes driven) full time data science immersive program with a unique pedagogy, a rigorous curriculum, and an engaging community. As the academic lead, I taught classes, managed a team of instructors, and worked with our operations team to streamline processes involved with admissions, hiring, and classroom management (curriculum and students).

Software Engineer, Alpine Data Labs
San Francisco, California, Jul 2012 — Nov 2012

Wrote distributed machine learning algorithms in Java to perform scalable predictive analytics on Hadoop and interface with legacy SQL implementations. Developed the software product according to agile best practices and worked with a small engineering team under tight release deadlines.

Developer, Artsicle
New York, New York, Jan 2012 — Jun 2012

As the first technical hire, I worked closely with the CTO to develop a full-stack web application, everything from the UI with jQuery and Javascript to the back-end architecture with Ruby on Rails. Designed and implemented an API for the site and managed a group of interns who built projects on top of our API. Maintained an automated test suite and CI strategy for deployment on Amazon Web Services.

Teaching

Courses

Adjunct Faculty, University of San Francisco
MS in Analytics, San Francisco, California, Spring 2016

Instructor of record for MSAN 622: Introduction to Information and Data Visualization. Designed curriculum, created teaching materials (exercises, projects, assessments), delivered lectures, graded assignments, and gave feedback on all course projects.

Adjunct Instructor, University of New Haven (GalvanizeU)
MS in Data Science, San Francisco, California, Spring/Summer 2015

Developed and taught graduate courses on statistics and data analysis, distributed and scalable data engineering, machine learning, and data visualization.

Instructional Design, Galvanize, Inc.
Data Engineering Immersive, San Francisco, California, 2015

Worked with instructors to design and implement a full time data engineering immersive focused on the technologies (Hadoop, Spark, etc.) as well as the techniques (distributed architectures, data management, etc.) to build scalable data systems.

Program Director, Zipfian Academy
Data Fellowship Program, San Francisco, California, Summer 2014

Mentored a small group of graduate students as they worked through an accelerated curriculum and develop a capstone project to present to hiring companies.

Lead Instructor, Zipfian Academy
Data Science Immersive, San Francisco, California, (Fall 2013, Spring 2014, Fall 2014)

Lectured twice daily (including live coding), assisted students throughout the day as they worked through a project based curriculum, and provided feedback on assignments once completed. Additionally, I reviewed capstone project proposals, taught presentation skills, and mentored students to ensure each had the support to execute on a successful project.

Instructional Design, Zipfian Academy
Data Science Immersive, San Francisco, California, Apr 2013 — Dec 2014

Designed and developed the curriculum for a 12 week, full-time, immersive data science program. Topics included software engineering fundamentals, statistics and probability, linear algebra, machine learning, natural language processing, network analysis, and applied case studies.

Instructor

Instructor, Gray Area Foundation for the Arts
Creative Code Immersive, San Francisco, California, Spring 2016 (Jan -- Mar)

Taught the web development portion of a ten-week course focused on giving artists, designers, and technologists a strong foundation in the art of creative coding (Javascript, p5.js, Three.js, etc.)

Instructor, Gray Area Foundation for the Arts
Creative Code Immersive, San Francisco, California, Summer 2015 (Apr – June)

Taught the web development portion of a ten-week course focused on giving artists, designers, and technologists a strong foundation in the art of creative coding (Javascript, p5.js, Three.js, etc.)

Invited Guest Lectures

D3 deconstructed, Visualization in HCI (05-499/899A) [slides]
Carnegie Mellon University, Pittsburgh, Pennsylvania, Fall 2019

Introduction to data visualization with D3.js, Visualization in HCI (05-499/899A) [slides]
Carnegie Mellon University, Pittsburgh, Pennsylvania, Fall 2019

Real-time data driven web applications, Full Stack Immersive
Galvanize, Inc., San Francisco, California, Spring 2015

Teaching Assistant

TA, Carnegie Mellon University
10-615 Art and Machine Learning, Pittsburgh, Pennsylvania, Spring 2018
Provided assistance to Dr. Eunsu Kang and Dr. Barnabas Poczos in preparing course materials, grading assignments, and providing student feedback. Also lead hands-on labs, helped students with course projects, and occasionally lectured.

Associate Instructor, Hack Reactor
Software Engineering Immersive, San Francisco, California, Spring 2013
Taught a Javascript first, full stack software engineering curriculum. Topics included front-end frameworks like Angular.js and Backbone, as well as back-end technologies like Node.js. Designed and developed a test driven Ruby on Rails module which supplemented the existing Javascript focused curriculum.

Associate Instructor, General Assembly
Introduction to Web Development, San Francisco, Fall 2012/Spring 2013
Assisted students with assignments and labs, held office hours, provided one-on-one tutor support, and gave feedback on student projects. Curriculum taught both front-end web development fundamentals (HTML, CSS, Javascript) and server-side application programming (using Ruby on Rails).

Associate Instructor, General Assembly
Programming Fundamentals using Ruby on Rails, New York City, Summer 2012
Assisted students with assignments and labs, held office hours, provided one-on-one tutor support, and gave feedback on student projects. Curriculum taught programing fundamentals using Ruby and web application development basics using Ruby on Rails to non-technical, entrepreneurial students.

Publications

Working Papers

Dinu, J. *A computational model of emergent bias in human-in-the-loop machine learning*

Dinu, J., Bigham, J., Kolter, Z. *An empirical evaluation of axiomatic interpretability assumptions in feature attribution explanations*. `https://doi.pizza/interpretability-evaluation`

Conference

Liu, X., Sun, A., Dinu, J., Sciuto, A., Shy, S., Hong, J. (WebConf '20 Submission). *Identifying Terms and Conditions Important to Consumers Using Crowdsourcing and Pairwise Comparisons*. `https://doi.pizza/crowdterms`

Book

Dinu, J. (2020, forthcoming). *Debugging Data Science: A Practical Pythonic Primer to Understand Your Data and Troubleshoot your Models*. Addison-Wesley.

Video

Dinu, J. (2019). *Data Science Fundamentals Part 2: Machine Learning and Statistical Analysis*. Addison-Wesley.

Dinu, J. (2017). *Data Science Fundamentals Part 1: Learning Basic Concepts, Data Wrangling, and Databases with Python*. Addison-Wesley.

Dinu, J., & Kent, K. (2016). *Cracking the Data Science Interview*. O'Reilly Media.

Dinu, J. (2015). *Building Spark Applications*. Pearson.

Dinu, J., Orban, R., & Saden, C. (2014). *Data Visualization and D3.js*. Udacity.

Software

Dinu, J. (2019). *Machina: A declarative framework for efficient lifelong experiments and budgeted designs for adaptive experimentation on crowd marketplaces*. Version 0.0.1. `https://github.com/jondinu/machina`

Media

Software Engineering Daily (2015, October 29) *Galvanize Data Science with Jonathan Dinu and Ryan Orban*. Retrieved from http://softwareengineeringdaily.com

Venture Beat (2014, November 3) *Why LinkedIns data science reorg actually makes a lot of sense*. Retrieved from http://venturebeat.com

Venture Beat (2014, April 1) *Data scientists need their own GitHub. Here are four of the best options*. Retrieved from http://venturebeat.com

ITworld (2013, August 15) *Data visualization, Beneficial but perilous*. Retrieved from http://www.itworld.com

Presentations and Panels

2018 Presenter, "Uncovering Factions in Parliamentary Voting with Probabilistic Latent Variable Models", *CASOS @ Carnegie Mellon University*, Pittsburgh, Pennsylvania

2017 Presenter, "Videoplacean artificial reality", *Carnegie Mellon University*, Pittsburgh, Pennsylvania

2016 Presenter, "Surfing Silver, Dynamic Bayesian Forecasting for Fun and Profit", *Domino Data Lab: Data Science Pop-up*, Austin, Texas

2015 Presenter, "Visualizing Petabytes of Data with Spark and D3.js", *IBM Datapalooza*, San Francisco, California

Presenter, "Better Search at Scale: Leveraging Spark for Contextual NLP", *IBM Datapalooza*, San Francisco, California

Presenter, "Machine Learning Ensembles on Spark", *IBM Datapalooza*, San Francisco, California

Presenter, "Better Search at Scale with Spark", *Eventbrite Tech Talk*, San Francisco, California

Panelist, "Do you need context or is data enough?", *Domino Data Lab: Data Science Pop-up*, Chicago, Illinois

Moderator, "Intern to CTO", *Hirepalooza*, San Francisco, California

Panelist, "The Art of Recruiting Senior Tech Talent", *Hirepalooza*, San Francisco, California

Panelist, "Civic Data", *Gray Area Festival*, San Francisco, California

2014 Presenter, "On Building a Data Science Curriculum", *PyData Conference*, New York, New York

Presenter, "Distributed Machine Learning: Architectures to Leverage Streams of Data", *IOTAconf*, San Francisco, California

Presenter, "Modern Education in a Postmodern world ", *GraphLab Conference*, San Francisco, California

Presenter, "Data Engineering 101, Building your First Data Product", *PyData Conference*, Menlo Park, California

Moderator, "Data Science for Social Good", *SF Data Science Meetup*, San Francisco, California

2013 Presenter, "Why I Teach (Data Science)", *DataWeek Conference*, San Francisco, California

Presenter, "Meta-Learning, What Quantum Theory has to Teach us about Education", *Ignite SF #7*, San Francisco, California

Tutorials

2020	"Debugging Data Science (part 1): Evaluating Machine Learning in Practice", *Pearson Live Training*, Online
2019	"Causal Inference in Data Science", *Pearson Live Training*, Online
	"Debugging Data Science", *Pearson Live Training*, Online
2018	"Machine Learning for HCI", *Human-Computer Interaction Institute*, Pittsburgh, Pennsylvania
2016	"Sonifying Data", *Moogfest*, Durham, North Carolina
	"Data Sonification with p5.js", *Gray Area Festival*, San Francisco, California
2015	"Hands-on with D3.js: Civic Impact", *Open Data Science Conference*, San Francisco, California
	"Better Search at Scale: Leveraging Spark for Contextual NLP", *Rich Data Summit*, San Francisco, California
	"Building Data Science Applications w/ Spark (in Python)", *Domino Data Lab: Data Science Pop-up*, Seattle, Washington
	"Interactive Data Visualization with D3.js", *DataWeek Conference*, San Francisco, California
	"Scalable Data Pipelines with Luigi", *PyData Conference*, Seattle, Washington
	"Civic Impact through Data Visualization", *Gray Area Festival*, San Francisco, California
	"Building Interactive Data Visualizations", *O'Reilly Strata Conference*, San Jose, California
2013	"Intro to Data Science and Machine Learning", *DataWeek Conference*, San Francisco, California
	"Data Science Dos and Don'ts", *SF Machine Learning Meetup*, San Francisco, California
2012	"Building real-time data centric applications with Node.js", *General Assembly*, San Francisco, California

Service

Ombudsperson, Carnegie Mellon University
Human-Computer Interaction Institute, Pittsburgh, Pennsylvania, Sept 2017 — Sept 2018

Advisor, UC Berkeley Extension
Data Science Advisory Board, Berkeley, California, Sept 2015 — present

Data Ambassador, DataKind
SF Chapter, San Francisco, California, Sept 2015 — May 2016

Advisor, Gray Area Foundation for the Arts
Cultural Incubator, San Francisco, California, May 2015 — Mar 2016

Co-founder and Co-organizer, SF Data Science Meetup
Community of 15,000+ Members, San Francisco, California, 2013 — 2016

Mentorship

Amber Horvath, Ph.D. HCI, Carnegie Mellon University

Sarah Shy, B.S. Statistics and HCI, Carnegie Mellon University

Brandon Fetters, Masters Student, University of New Haven

Irina Tagintseva, Software Engineer, Gap, Inc.

Eduardo Moreno, Full Stack Immersive Student, Galvanize

Luis Manzo, Full Stack Immersive Student, Galvanize

Daphne Watson, Full Stack Immersive Student, Galvanize

Nina Bachvarova, Full Stack Immersive Student, Galvanize

Andrew Fowler, Full Stack Immersive Student, Dev Bootcamp

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