

JOEL GRUS

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Technical leader, software engineer, data scientist, contrarian, best-selling author, popular conference speaker, stand-up comic, livecoder, angel investor, and strong generalist. Enthusiastic about well-designed software, readability, clean code, mentoring and learning, extracting value from data, AI / ML / NLP, engineering best practices, and functional programming.

BOOKS

[Ten Essays on Fizz Buzz](#) (LeanPub, 2020)

[Data Science from Scratch: First Principles with Python](#) (O'Reilly Media, 2nd ed. 2019)

[Thinking Spreadsheet](#) (self-published, 2010)

WORK EXPERIENCE

GOLDMAN SACHS | San Antonio, TX (remote) | 2022 - 2023

Vice President

I played a "principal engineer" role in the Consumer Decision Science organization. I had two main focus areas: harmonizing and streamlining our machine learning / data science operations across different teams, and using ML + NLP to better understand customer interactions. For the latter I focused on *complaints* data, prototyping models for issue classification, semantic search, topic extraction, and anomaly detection.

CAPITAL GROUP | Seattle, WA → San Antonio, TX | 2019 - 2022

Principal Software Engineer, Search / ML

I built and led a team that used applied machine learning and NLP to solve business problems for the Investment Group. Our work included search relevance, automated summarization, named-entity recognition, text classification, natural language generation, document embeddings, transformer models, zero-shot learning, MLOps, data science, and plain old software engineering.

ALLEN INSTITUTE FOR ARTIFICIAL INTELLIGENCE | Seattle, WA | 2016 - 2019

Senior Research Engineer

Research and engineering on the [AllenNLP](#) library. I did some of everything: library design, product strategy, code refactoring, adding features, devops, implementing and training models, building React demos, pairing with researchers, mentoring, writing tutorials, supporting users, giving talks, fixing bugs, and all the rest.

Previously I worked on the [Aristo](#) project, teaching computers to answer science questions. Responsibilities spanned pure engineering tasks (building data pipelines, implementing RPC frameworks), pure research tasks (designing and building topic-specific question solvers, generating science questions), and everything in between (e.g. creating Java wrappers and a Scala API for a C++ neural net library).

GOOGLE | Seattle, WA | 2014 - 2015

Software Engineer

Tech lead on Supply Chain Planning team. Responsible for technical design and implementation of backend services, gathering requirements, coordinating developers, writing code, and relationships with business users. Previously backend engineer on Display Ads; designed and built data-driven features for a greenfield ads benchmarking tool.

VOLOMETRIX | Seattle, WA | 2011 - 2014

Chief Scientist and Head of Analytics

Employee #2 at enterprise SaaS startup. Created prototype for in-memory analytical engine, designed and implemented most of the analytics in the product, and participated in every other aspect of growing the company from 3 people to 15 people. Responsibilities split roughly evenly among data science R&D, writing production code, and managing people. (Company acquired by Microsoft [in 2015](#).)

DECIDE | Seattle, WA | 2010 - 2011

Analyst

Wrote code, built models, and designed processes to collect, analyze, and predict data for consumer electronics startup. (Company acquired by eBay [in 2013](#).)

FARECAST / MICROSOFT | Seattle, WA | 2006 - 2010

Senior Analyst / "Fareologist" / Software Developer

Mined travel data for "fareology" insights, wrote code and built dashboards to track business metrics and customer activity, simulated revenue impact of changes to analytic products, designed algorithms to identify "deals". (Company acquired by Microsoft [in 2008](#).)

REPRESENTATIVE TALKS

- [What's the simplest thing that might possibly work, and why didn't you try that first?](#) Normconf 2022
- [Simplicity](#) keynote at Southern Data Science 2022
- [Beating a Word Game with Python](#) keynote at Pycon Belarus 2021
- [Ten Ways to Fizz Buzz](#) PyData Global 2020
- [Data Science: A Vision of Things to Come](#) keynote at Southern Data Science 2020
- [Managing Junior Data Scientists in the Time of Coronavirus](#) IBM Learn AI 2020
- [Muppets and Transformers: The New Stars of NLP](#) RE•WORK AI Summit 2020
- [Statistics Isn't That Funny, But It Has Its Moments](#), banquet keynote at SDSS 2019
- [Reproducibility: A Trojan Horse for Software Engineering Best Practices](#), ICLR 2019
- [Modern NLP for Pre-Modern Practitioners](#), keynote at QCon.ai 2019
- [If Not Notebooks, Then What?](#) "Reproducible AI" workshop at AAI 2019,
- [Writing Code for NLP Research](#) (with Matt Gardner + Mark Neumann), tutorial at EMNLP 2018
- [How Becoming Not a Data Scientist Made Me a Better Data Scientist](#), Southern Data Science 2018
- [AllenNLP and Best Practices for NLP Research](#), SAP/Concur "Lunch-n-Learn" (and others) 2018
- [I Don't Like Notebooks](#), JupyterCon 2018
- [Livecoding Madness: Let's Build a Deep Learning Library](#), ODSC West 2017 (also, OSCON 2018)
- [Using AI to Answer Science Questions](#), ODSC East 2017 (also, Southern Data Science 2017)
- [Fizz Buzz in Tensorflow](#), PyData Chicago 2016 (also, ODSC West 2016, WrangleConf 2016)
- [Fun With Trump Tweets](#), Seattle TwitterDev Meetup, October 2016
- [Learning and Teaching Data Science from First Principles](#), Data Day Texas 2016 (and others)
- [Stupid Itertools Tricks for Data Science](#), PyData Seattle 2015
- [Image Posterization with k-Means Clustering](#), Seattle PyLadies (workshop)
- [Secrets of Fire Truck Society](#), Ignite Lightning Talk at Strata 2013

EDUCATION

MS Social Science, Caltech

MS Mathematics, University of Washington

BA Mathematics, Rice University

SELECTED PUBLICATIONS

- [Reasoning about Actions and State Changes by Injecting Commonsense Knowledge](#), EMNLP 2018.
- [AllenNLP: A Deep Semantic Natural Language Processing Platform](#), NLP OSS @ ACL 2018.

FUN

- [livecoding videos](#)
- [Fizz Buzz in Tensorflow](#)
- [School is Not Healthy for Children and Other Living Things](#) (lightning talk about unschooling)