Ilya Nepomnyashchiy

I want to learn how to better build and design impeccable backend systems (both distributed and real-time), then use that knowledge to make things that accomplish magical results: either slinging petabytes of data around to learn patterns that improve somebody's life, or processing data in real-time to generate impossibly fast analyses or help autonomous vehicles navigate our world.

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Relevant Coursework

Computer Science: Decidability and Tractability (Introduction to Theory), Complexity Theory, Introduction to Algorithms, Introduction to Systems, Artificial Intelligence, Machine Learning, Discrete Differential Geometry, Computer Vision, Graphics, Introduction to Haskell, Introduction to GPU Programming.

Mathematics: Abstract Algebra, Classical Analysis (Real and Complex), Geometry and Topology, Algebraic Topology, Discrete Mathematics, Calculus of One and Several Variables, Linear Algebra, Differential Equations, Probability and Statistics. **Science:** Electricity and Magnetism, Quantum Mechanics, Laboratory-based Science.

Ongoing Education

Realizing that my education should never be considered complete, I have made it my mission to read a variety of textbooks and papers on my own and post notes, summaries, solution sets, and comments online. Follow along with me at http://ilyanep.com/reading.html

Work Experience

Software Engineer; Palantir Technologies.
Palo Alto, CA (September 2013 - Present)

- Did feature work (in close collaboration with the front-end team), performance work, API design (for the use of forward deployed engineers' data search code), and a major refactor of the codebase for an alert triaging product. Worked as the only or most senior backend developer on the project for approximately six months out of 14.
- Currently, I am doing feature and performance work on an Apache Spark-based backend to a platform for large data set analysis. The performance work, which I am primarily responsible for, will take us from batch-only to real-time data for the customer-facing application we currently support.
- Officially mentored one intern and unofficially helped several other interns and new hires ramp up.

Technical Intern; Sift Science
San Francisco, CA (Summer 2013)

- Experimented with a new learning model and developed a front-end to help new customers quickly provide training examples from their own data.
- Supervisors: Jacob Burnim and Jason Tan

Software Engineering Intern; Google
Santa Monica, CA (Summer 2011)

- Refactored the main step in lexicon generation for rephil, a bayesian network used throughout Google to group words into concept clusters, to greatly clean up the code and improve its runtime by 50%.
- Began adding a new feature for scoring candidate compounds for the lexicon.
- Supervisor: Joe Daverin

Research and Teaching

Summer Undergraduate Research Fellow; California Institute of Technology
Pasadena, CA (Summers 2010 & 2012)

- *2012:* Investigated how to create intelligent time lapses of surveillance and 'personal diary' videos in real-time. Advisors: Professor Pietro Perona and Dr. Michael Maire
- *2010:* Investigated the use of crowdsourcing through Amazon Mechanical Turk to perform segmentation on images. Advisors: Professor Pietro Perona and Dr. Peter Welinder

Teaching Assistant; California Institute of Technology
Pasadena, CA (2012-2013)

- Graded assignments and held regular office hours for CS21 (Decidability and Tractability), ME/CS132a (Introduction to Robotics) and CS151 (Graduate-level Complexity Theory).

Education

California Institute of Technology; Pasadena, CA
Graduated June 2013: B.S. with Honor
Double Major: Computer Science and Mathematics
Overall GPA: 3.8; CS GPA: 3.9; Math GPA: 3.8
Illinois Mathematics and Science Academy; Aurora, IL; Graduated June 2009

Technology Experience and Miscellaneous

Proficient in: Java, Git, Basic UNIX
Experience in: Apache Spark, C, C++, Python, Mathematica, Matlab, Python, Ruby, Haskell, CUDA, Scheme, SVN, LaTeX, SQL (Postgres, Oracle, Vertica, SQLite) and HTML/CSS.
Other interests and hobbies: Tenor saxophone, Improvisational acting, Cycling, Starcraft II, and DotA 2.