

NATHAN DALY

Software Engineer

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STATEMENT OF OBJECTIVE

I'm [terrified about](#) Climate Change. I'm also [inspired by its challenge](#). I want to refocus my passion for problem solving onto the climate crisis: energy, the grid, transportation, politics—whatever it takes.

EDUCATION

UNIVERSITY OF MICHIGAN, COLLEGE OF LS&A

DECEMBER 2013

B.S. in Computer Science, Minor in Chinese Language

- High Distinction (GPA 3.89); Phi Beta Kappa; High Honors for Thesis; Honors Program

COURSERA

Machine Learning by Stanford University (Andrew Ng). [Certificate earned](#) on October 2, 2016

WORK EXPERIENCE

GOOGLE INC.

AUG 2014 - PRESENT

Software Engineer III -- Search Infrastructure

- **Google.com Web Server (GWS)** -- large-scale API design/cleanup: reigning in technical debt by migrating thousands of client code callbacks to new infrastructure; maintain automated refactoring tools for extremely large-scale, long-lived Java/C++/SWIG code base. Partnering directly with clients of our infrastructure to identify and fix their challenges in building features. Monitoring and reigning in CPU cost growth.
- **Low-level query serving system** -- transformed memory management system, reducing total latency by 10%; cleaned up custom memory management API, now in use by many teams; modularized and merged two legacy code bases.
 - Created/maintain C++ protobuffer memory management utilities used by ~18% of Google.
- **Google Brain** -- 20% project with deep-learning infrastructure: integrated visualizations with TensorFlow pipeline to improve qualitative interpretations of model performance.

NOVODYNAMICS INC.

MAY - AUG 2013

Software Engineering Intern

- Implemented and compared Natural Language Processing algorithms for a text data analysis problem (Hidden Markov Models, Probabilistic Grammars, and search algorithms).
- Collaborated in the design of a modern, object-oriented, C library API for product.

MITRE CORPORATION

MAY - AUG 2012

Software Engineering Intern

- Wrote C++ hardware driver for MITRE proprietary GPS signal-tracking hardware.
- Created python network interface to GUI application for testing of hardware drivers.

RELEVANT EXPERIENCE

JULIA LANGUAGE CONTRIBUTIONS

2016 - PRESENT

- Documentation, bug fixes, and tests in JuliaLang and packages. Attended JuliaCon 2017.

BACHELOR'S HONORS THESIS

SEP 2013 - DEC 2013

"Dynamically Registering C++ Exception Handlers:

Centralized Handling of C++ Exceptions in Application Framework Libraries"

- Authored a bachelor's thesis under Prof. David Kieras, Professor of Computer Science.
- Explored the range of exception handling solutions in current C++ GUI libraries.
- Presented a new, efficient solution for allowing a user to register C++ exception handler callbacks, which will be called if and only if an exception of a specific type is caught.

COMPUTATIONAL LINGUISTICS INDEPENDENT STUDY -- EECS 498

AUG - DEC 2012

Modeling Second Language Learning as a Probabilistic Context-Free Grammar

- Researched with Prof. Steven Abney, Professor of Linguistics and Computer Science.
- Implemented EM Algo to dynamically build a grammar after new each sentence heard.
- Successfully builds Lexicon for both whitespace-delineated languages (e.g. French, Arabic) and non-whitespace-delineated languages (e.g. Chinese).

OTHER EXPERIENCE

FILM / COMMERCIAL ACTOR

2002 - PRESENT

- Performed in three full-feature films, two short-films, and several television commercials.

OTHER SKILLS

Foreign Language

-- Advanced spoken Mandarin Chinese, Intermediate written Chinese; Basic written Arabic