Horace He

github.com/chillee

hh498@cornell.edu | 650.483.3314

EDUCATION

CORNELL UNIVERSITY
BA in Computer Science
BA in Mathematics
Expected May 2020 | Ithaca, NY

COURSEWORK

(*) are in progress.

GRADUATE/PHD
CS6110: Programming Languages
CS6113: Language Based Security
CS6120: Advanced Compilers (*)
CS6820: Advanced Algorithms (*)
CS6840: Algorithmic Game Theory
ORIE6741: Bayesian ML

UNDERGRADUATE
CS4780: Machine Learning
CS4775: Computational Genomics
CS4410: Operating Systems
CS4120: Compilers + Practicum
MATH2230/2240: Honors Linear Algebra
& Multivariable Calculus
MATH4130: Honors Analysis

ONLINE
Stanford CS231n
Coursera: Machine Learning

SKILLS

LANGUAGES
Python • Typescript • OCaml • C++ •
Rust • Javascript • Java • Elixir • SQL •
LaTeX • Flow

TECHNOLOGIES
PyTorch • Tensorflow • GraphQL • React
• VSCode API • Node.js • PostgreSQL •
Menhir

DEVELOPMENT TOOLS
Visual Studio Code • Vim/Neovim • Git •
Mercurial

SPECIALTIES
Software Architecture • Deep Learning •
Programming Languages / Compilers

EXPERIENCE

FACEBOOK | PyTorch Intern
June 2019 – August 2019 | Menlo Park, CA
- Worked on the Torchscript/JIT team, for bringing PyTorch to production.
- Designed and implemented custom class binding into Torchscript ala Pybind11.
- Worked on FAIR SysML group on learning to schedule Halide pipelines for high performance image processing and deep learning. Contributed key improvements that lowered eval error from 70% to 16%.
- Improved compilation times for Torchscript models by 40%.

GOOGLE | Software Engineering Intern
June 2018 – August 2018 | Mountain View, CA
- Rewrote entire SQLx compiler (which compiles to GoogleSQL), to comply with standard compiler design and allow for greater extensibility. Used daily by entire team in production.

FACEBOOK | Software Engineering Intern
June 2017 – August 2017 | Menlo Park, CA
- Created third party project metadata database with dependency analysis, allowing for easy analysis of third party projects for CVE's and dead code.
- Found and implemented an algorithm from research paper for estimating transitive closures, achieving >20x speedup.
- Started project for remote editing in VSCode (now a full project at Facebook).

VSCODEVIM | Core Maintainer/Developer
March 2017 – Current | Github
- VsCodeVim is the most popular vim emulation plugin for VSCode, with over 8M downloads and 6000+ stars on Github.
- Fixed/added hundreds of issues/features

CU VISION AND LEARNING | Founder/Co-President
2018 - Current
- Founded club to promote undergraduate research in machine learning and vision. In collaboration with Facebook Artificial Intelligence.

AWARDS

2019	International	ICPC World Finalist
2019	1st	ICPC Greater New York Region Winner
2019	National	CRA Outstanding Undergraduate Research Honorable Mention

PUBLICATIONS

[1] D. Geisler, I. Yoon, H. He, and A. Sampson. Geometry types for graphics programming. Programming Language Design and Implementation (Under Review), 2019.

[2] H. He. State of machine learning frameworks in 2019. The Gradient, Oct 2019.

[3] H. He*, Q. Huang*, Z. Gu*, I. Katsman*, S. J. Belongie, and S.-N. Lim. Intermediate level adversarial attack for enhanced transferability. International Conference of Computer Vision, 2019.

[4] H. He, A. Lou, Q. Jiang, I. Katsman, P. Pawakapan, S. Belongie, and S.-N. Lim. Adversarial example decomposition. International Conference on Machine Learning, Workshop on Security and Privacy in Machine Learning 2019, 2018.

(*) equal contribution