

Jacob Chvatal

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EDUCATION

NORTHEASTERN UNIVERSITY

B.S. IN COMPUTER SCIENCE

Expected May 2022 | Boston, MA
 Khoury College of Computer Sciences
 Dean's List (Fall 2018, Spring 2019)
 GPA: 3.525 / 4.0

LINKS

GitHub:// [jakeisnt](#)
 LinkedIn:// [jacob-chvatal](#)
 Twitter:// [@jakeisnt](#)
 Website:// [jacob.chvatal.com](#)

COURSEWORK

GRADUATE

Algorithms

UNDERGRADUATE

Artificial Intelligence
 Computer Systems
 Theory of Computation
 Object-Oriented Design
 Programming Languages
 Compilers
 Discrete Mathematics
 Linear Algebra
 Fundamentals of CS 1 (TA)
 Fundamentals of CS 2 (TA)
 Research

SKILLS

PROGRAMMING

Over 5000 lines:

Java • Shell • JavaScript • Haskell
 OCaml • Python • HTML/CSS

Over 1000 lines:

TypeScript • C • C++ • SQL • Assembly

Familiar:

Android • Coq • ACL2 • \LaTeX

TECHNOLOGIES

Experienced:

Linux and Nix(OS) • Docker • React • PostgreSQL

Familiar:

Plan9 • SQLite/MySQL • Angular

EXPERIENCE

SKIRA TECH | SOFTWARE ENGINEERING INTERN

August 2020 – December 2020 | Stockholm, Sweden

- Developing a marketplace to transform the Swedish grain industry with GraphQL, Sequelize, PostgreSQL, React/Redux.
- Spearheaded and executed significant contributions to the product, reworking the central user interface and enhancing application performance.

INTEL CORPORATION | SOFTWARE ENGINEERING INTERN

May 2020 – August 2020 | Hillsboro, OR

- Designed and developed a multimodal data management service for the Edge Insights video analytics system with Python, Protobuf and Docker (+compose).
- Interfaced with VDMS graph database; containerized and hosted.

CDK GLOBAL | SOFTWARE DEVELOPMENT INTERN

June 2018 – Aug 2018 | Portland, OR

- Led development of React & Spring Boot web app w/ Material UI components
- Utilized Docker and nginx to containerize and host application through CDK

PORTLAND STATE UNIVERSITY | STUDENT INTERN

June 2017 – Aug 2017 | Portland, OR

- Impl. C++ library to compress and apply linear algebra to sparse matrix data
- Applied matrix operations to analyze and graph large 3D mesh structures
- Distr. code to COEUS supercluster w/ OpenMP parallel programming pragmas

RESEARCH

NU SANDBOX | DEVELOPER AND PROJECT LEAD

May 2019 – Present | Boston, MA

- Reworked A-Eye, a website used by a course at NEU to teach ML/AI
- Managed team for a CV app to analyze ELISA vials for chem. experiments
- Used Python's Kivy framework, Android's JDK and OpenCV
- Founded GraduateNU, a schedule planning system for NEU students
- Worked on an Android app to fetch accel. and activity data for a psych lab

PROJECTS

FUNCTIONAL COMPILER OCaml

Developed a compiler targeting x86 Assembly for a functional language with type checking, inference, garbage collection, and I/O for a capstone course.

POO-NU HackHarvard

Assembled React Native application with Google Maps API, GraphQL and MySQL to help students find Northeastern campus bathrooms.

SYSTEM CONFIGURATION NixOS

Developed a completely reproducible NixOS configuration EDSL with innovative technologies like Wayland and Pipewire. Designed UI, configured self-hosted email and web servers. Enabled practically instant reinstallation and redeployment.

COURSEWORK / PROJECTS Northeastern

Games in ISL/Java, a shell and FUSE-based file system in C, a quiz sharing application with Python's Flask and SQL, interpreters for many toy languages in Haskell, and a substantial compiler for a typed functional programming language in OCaml.
Code for these projects is available upon request as per Northeastern policy.