Ishaan Gandhi

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EDUCATION

Harvey Mudd College — Claremont, CA
Bachelor of Science in Computer Science & Mathematics — *2017 – 2021*

Will graduate in 3.5 years as a *Harvey S. Mudd scholar*. Dean's List all semesters. Selected coursework: Computer Systems, Databases, Operating Systems, Programming Languages, Software Verification, Advanced Algorithms, Algorithmic Game Theory, Model Theory.

EXPERIENCE

Facebook — Summer 2019
Software Engineering Intern - Place Visit Detection — *New York, NY*

- Implemented 2-pass scoring in Facebook's machine learning model for place visit detection, increasing model AUC by 0.74pp.
- Worked on prediction service and training workflow in C++ and Python respectively.

Facebook — Summer 2018
Software Engineering Intern - Real time Infrastructure — *Seattle, WA*

- Increased the security of FB's pub-system by adding cryptographic authentication.

Capital One — Summer 2017
Software Engineering Intern - Commercial Bank — *Tysons Corner, VA*

- Worked on full stack development for an IOT sensor network.
- Built a real-time dashboard and wrote a REST API.

OPEN SOURCE CONTRIBUTIONS

- Added new network protocol dissectors and fixed bugs in the **TCPDump** and **Wireshark** repositories as part of the Juniper Networks clinic program.
- Fixed bugs and added interactive parsing mode to the POSIX compliant shell parsing libraries **Morbig** and **Morsmall**.

PUBLICATIONS

- **Ishaan Gandhi**, Anshula Gandhi. Lightening the Cognitive Load of Shell Programming. 11th Annual Workshop on Evaluation and Usability of Programming Languages and Tools (PLATEAU 2020.)

RESEARCH

Pomona College | *Formalization of the POSIX shell standard* — Sep 2020 – Dec 2020

- Worked on integrating the Morbig parser to the SMOOSH shell in OCaml.
- Found and fixed bugs in the **Morbig** and **Morsmall** parser libraries, and extended them to support interactive parsing.

ETH Zürich | *Advanced Software Technology Lab* — Feb 2020 – July 2020

- Took a semester off school to research software verification in the *Swiss Federal Institute of Technology*.
- Built coverage-guided fuzzers for SMT solvers and profiled symbolic executors using C++ and Python.

NASA | *Stellar Astrophysics* — Jun 2016 – Jun 2017

- Wrote Monte Carlo simulator to study the performance of various data compression algorithms on space telescopes.
- Sped up image data processing for my research group 600x from Hubble Space Telescope using scripts.

PROJECTS

Shell Notebook | *Node.js, React*
- Built a terminal replacement for Mac, Linux, and Windows.
- Sold to paying users. Check it out at shellnotebook.com

Symbolic Executor | *Python*
- Hired by Harvey Mudd's CS department to design a project for the *Applied Logic* course. Wrote a symbolic executor for a subset of Python.

iOS App Development | *Swift, Objective-C*
- Built and published games and utilities for iPhone and iPad.
- Received over 50,000 downloads and made about $2k in sales.

Golang transpiler | *Golang, Python*
- Wrote a basic transpiler to turn Python code into Go.
- Won 1st place and around $1k in prizes at CU Hacks.

Python Static Analysis Tool | *Python*
- Wrote a static analysis tool to find bugs in Python scripts.
- Won 1st place and around $700 in prizes at 5C Hacks.

TECHNICAL SKILLS

Python, C, C++, OCaml, Haskell, Java, Go, Swift, SQL, Bash, Git, Flask, JS, React, AWS, Kafka, Mongo

TEST SCORES

ACT: (99.9 percentile)

Math:	36/36
English:	36/36
Reading:	36/36
Science:	36/36