ADAM HASTINGS

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STATEMENT AND OBJECTIVE

I am a final-year Ph.D. candidate at Columbia seeking full-time employment starting January 2024. I am a quantitative researcher, engineer, and scientist with a vast breadth and depth of knowledge, skills, and experience in computer (science | engineering | security), data science, machine learning, and research methodologies.

EDUCATION

Ph.D., Computer Science, Columbia University 2018 – present
Advisor: Simha Sethumadhavan — GPA: 4.1

M.Sc., Electrical & Computer Engineering, Brigham Young University 2016 – 2018
Thesis topic: FPGA security — GPA: 3.9

B.Sc., Computer Engineering, Brigham Young University 2012 – 2016
Minors: Mathematics, Computer Science — GPA: 3.6

WORK EXPERIENCE

Graduate Research Assistant, Columbia University 2018 – present
Computer Architecture Security Technologies Lab (CASTL) *New York, NY*

- My research (see Publications) leverages computer (software | hardware | architecture | systems) design, machine learning, and economic modeling to measure security tradeoffs and incentivize secure-by-design computer systems. I have presented my work at academic conferences and managed several undergrad/MS research interns.

Graduate Intern, Bloomberg L.P. Summer '21, '22
Security Analytics and Identity Architecture Team (hardware security), CTO group *New York, NY*

- I developed and implemented applied cryptographic features on embedded biometric devices (in C and Python). I researched open source digital identity and FIDO2/U2F authentication protocols.

Graduate Teaching Assistant, Columbia University 2019 – present
Department of Computer Science *New York, NY*

- I have TA'd several grad-level CS courses: Computer Architecture x3 (including as head TA), Security I, and Hardware Security. I designed and graded assignments, instructed students, and managed class infrastructure.

SKILLS

Software	C, C++, C#, Python, Java, Bash, MATLAB, JavaScript. Embedded systems, algorithms, operating systems (including RTOS), networking, Git, Linux & Windows internals.
Hardware	Computer architecture, FPGAs, DRAM, SystemVerilog, VHDL, verification (OVM/UVM), Gem5 simulator, EDA tools (Xilinx, Cadence), microelectronics, circuits, some PCB design.
ML/Data Science	Deep learning, PyTorch, TensorFlow, linear algebra, scikit-learn, Jupyter, Pandas, STAN
Security	Hardware and software security, cryptography, sec. economics, regulation, policy & law
Other	Excellent written/verbal communication, presentation skills, and data analysis/visualization. Experienced w/ user studies, Excel, LaTeX. Successful in both collaborative & solo work.

SELECTED PUBLICATIONS

Architectural Security Regulation, pre-print '23 **A. Hastings**, R. Piersma, S. Sethudmadhavan

How Much is Performance Worth to Users?, CF '23 **A. Hastings**, L. Chilton, S. Sethudmadhavan

Revisiting Residue Codes for Modern Memories, MICRO '22 (IEEE Top Pick) E. Manzhosov, **A. Hastings**, et al.

A New Doctrine for Hardware Security, ASHES '20 **A. Hastings**, S. Sethudmadhavan

Using Physical and Functional Comparisons to Assure 3rd-Party IP, IVSW '18 **A. Hastings**, S. Jensen, et al.