

# Matthew Vilim

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## Education

### Stanford University

PhD, Electrical Eng.  
Fall 2016 – Present

- Languages, compilers, and architectures for FPGAs and reconfigurable accelerators
- Advised by Prof. Kunle Olukotun

### Stanford University

MS, Electrical Eng.  
GPA **3.58**  
Fall 2016 – Spring 2018

Concentration in semiconductor devices

### UIUC

BS, Computer Eng.  
GPA **3.95**  
Fall 2012 – Winter 2015

- Highest Honors, University Honors (top 3% of College of Engineering)
- O. Thomas and Martha S. Purl Scholarship, Frank C. Mock Scholarship, Grainger Freshman Scholarship, ECE Outstanding Freshman Scholarship
- Napier Award, Edward C. Jordan Award

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## Work

### NVIDIA

*GPU Verification Intern*  
Spring and Summer 2016  
Santa Clara, CA

- Contributed to features and performance of Volta randoms program generator
- Created ISA coverage tool to measure the proportion of instructions covered
- Worked with GPU architecture team to test and verify Volta memory model

### NVIDIA

*Systems Software Intern*  
Summers 2014, 2015  
Santa Clara, CA

- Developer on macOS graphics drivers team
- Worked across all levels of the driver stack including OpenGL and display driver
- Ported NVIDIA G-SYNC from Windows drivers to macOS drivers

### Argonne (ANL)

*Research Intern*  
Summers 2012, 2013  
Lemont, IL

- Developer on GREET, an energy and emissions model of the entire US energy system
- Worked to port a legacy Excel-based model as a C# .NET rewrite

### Entrepreneur

*Computer service business*  
2008–2012

- Sole proprietor of business with 180 customers, logging over 1500 hours
- Performed services such as computer setup and maintenance, network installation

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## Skills

### Software

- Experience with systems software, embedded systems, firmware, operating systems
- Familiar with common data structures and design patterns
- Proficient with C, C++
- Experience with assembly, Python and various scripting languages

### Hardware

- Experience with digital logic design, RTL, computer architecture
- Experience with Verilog, ASIC tool flow, FPGA synthesis
- Familiar with simple PCB design

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## Publications

### Prof. Kunle Olukotun

Stanford University  
Winter 2017 – Present

- Y. Zhang, A. Rucker, **M. Vilim**, *et al.* “Scalable Interconnects for Reconfigurable Spatial Architectures.” *ISCA*, 2019. (Submitted)

### Prof. Rakesh Kumar

UIUC  
Fall 2015

- Developed technique to increase Bitcoin mining profits
- **M. Vilim**, H. Duwe, R. Kumar, “Approximate Bitcoin Mining.” *DAC*, 2016.