

# Graham Gobieski

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## Education

### Carnegie Mellon University

2017 - Present

PhD Candidate

Advised by Prof. Nathan Beckmann, Prof. Brandon Lucia

### Columbia University

2013 - 2017

BA Computer Science, Minor Chemistry

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## Research

### Neural Network Inference on Intermittent Embedded Systems

Prof. Nathan Beckmann,  
Prof. Brandon Lucia  
Carnegie Mellon  
University  
2017 - Present

- Developed SONIC & TAILS – systems that leverage the regular structure of linear algebra operations to accelerate inference
- Optimized network structure for embedded devices and built automated testing framework with MSP430 and Powercast harvester
- Papers accepted to ASPLOS'19 and SysML'18

### “Shuffler: Fast and Deployable Continuous Code Re-randomization”

David Williams-King,  
Prof. Junfeng Yang  
Columbia University  
2015-2016

- Helped create system to defend against code-reuse attacks
- Implemented system in user space with minimal compiler flags
- Paper accepted to OSDI 2016

### “Clickable poly (ionic liquids): A materials platform for transfection”

Jessica Freyer,  
Prof. Luis Campos  
Columbia University  
2013-2016

- Designed novel post-polymerization functionalization strategy to synthesize polymers with cyclopropenium-ion functional groups
- Studied polymer applications to fuel cells and biological vectors
- Paper appeared in Angewandte Chemie 128

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## Professional Experience

### MongoDB Software Engineer Intern

2016

- Assisted in building proxy service that translated/compiled SQL queries into the MongoDB query language
- Wrote compiler frontend and distributed backend in GoLang

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## Project(s)

### Seesaw: Improving Batch Application Throughput

Brian Schwedock  
2017

- Modified ZSim simulator to support a variety of placement and eviction cache policies
- Helped develop a new policy that boosts resource allotment to latency-critical applications when required

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## Technical Skills

**Programming Languages:** C, C++, Python, GoLang

### Platform/Framework Experience

- Embedded Systems including those based on MSP430, RISC-V, ARM
  - Low-level drivers and libraries (e.g. embedded libc)
  - Architectural simulators including Spike, ZSim, and custom
  - Hardware synthesis utilizing SystemC and System Verilog
  - Databases such as MongoDB and MySQL
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