Kyle Patrick **May**

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Summary

Goal: Searching for a full-time opportunity starting in Summer 2021 that fosters my development as a young engineer

Skills: object-oriented programming, parallel programming, system modelling, networking, scripting, technical presentations, technical writing

Languages/Tools: C/C++, Python, SystemVerilog, Swift, Matlab, Java, git, vim, gdb, XCode, make/cmake, Wireshark

Notable Projects: Network Traffic Characterization, Augmented Reality iOS App, Implementation of Core OS Services, Design and Implementation of Out-of-Order Processor, Object Tracking from Video Data

Education

University of Wisconsin - Madison

Madison, WI

M.S. in Computer Science — *Sept. 2019 - May 2021*

- *GPA:* 4.00 / 4.00
- *Coursework:* Advanced Computer Networks, Advanced Algorithms, Advanced Topics in Computer Architecture, Human-Computer Interaction

University of Michigan

Ann Arbor, MI

B.S.E. in Computer Engineering, Summa Cum Laude — *Sept. 2015 - May 2019*

- *GPA:* 3.964 / 4.000
- *Coursework:* Parallel Computer Architecture, Microarchitecture, Operating Systems, Digital Signal Processing, Data Structures and Algorithms

Experience

University of Wisconsin - Madison

Madison, WI

Research Assistant : Analyzing Reinforcement Learning (RL) Workloads on CPUs and GPUs — *May 2020 - Dec. 2020*

- Conducted an exploratory study of RL algorithm performance on traditional architectures in order to build intuition about their behavior
- Profiled RL algorithms on both CPU and CPU/GPU systems, examining key metrics to differentiate RL from other well-understood workloads
- Ported a set of RL algorithms from Python to C++ using the PyTorch C++ Frontend API to enable more in-depth profiling and analysis

University of Wisconsin - Madison

Madison, WI

Teaching Assistant — *Sept. 2019 - May 2020*

- Prepared tutorials for students to empower them to more effectively manage their projects and collaboration through the use of tools like *git*
- Administered discussion sections to 50+ students, reinforcing core concepts from lecture and problem sets
- Systematized the use of plagiarism-checking software in the course, automating the process for the staff, to ensure academic integrity
- Enjoyed mentoring students, giving them a perspective on CS careers and graduate school

University of Michigan - College of Engineering

Ann Arbor, MI

Research Assistant : Designing, Modelling, and Evaluating a Reconfigurable, Parallel Computer Architecture — *Feb. 2018 - Aug. 2019*

- Collaborated with a large team of graduate students on a multi-faceted project, which resulted in two conference publications
- Analyzed target workloads, including graph analytics and linear algebra kernels, to develop a deep understanding of their memory behavior
- Created a novel, general representation of application memory behavior, which was communicated to a hardware prefetcher by the application to enable a 1.5-2.3X speedup over the state-of-the-art prefetching technology
- Modelled key aspects of the architecture's reconfigurable cache hierarchy, allowing for early evaluation of the proposed architecture
- Maintained the simulator for the memory system, working with other team members to enable them to use the simulator effectively
- Mapped linear algebra kernels to the proposed architecture, using a variety of parallelization techniques, to evaluate the architecture
- Communicated progress to principal investigators and team members via presentations to enable effective decision making and coordination

Publications

Prodigy: Improving the Memory Latency of Data-indirect Irregular Workloads Using HW/SW Co-design

- Talati, **May**, *et al.*. 2021. To appear in *27th IEEE International Symposium on High-Performance Computer Architecture* (*HPCA 27*).

Transmuter: Bridging the Efficiency Gap using Memory and Dataflow Reconfiguration

- Pal *et al.*. 2020. In *Proceedings of the ACM International Conference on Parallel Architectures and Compilation Techniques* (*PACT '20*).

Extracurriculars

Madison Half-Marathon, Participant, *2019*

Eta Kappa Nu (HKN), EECS Honor Society, Member, *2017-2019*