Louis Jenkins

34 W Montgomery Ave, Ardmore, Pennsylvania 19003, USA
LouisJenkinsCS@hotmail.com • +1 (610) 931-1207
https://www.linkedin.com/in/LouisJenkinsCS • http://github.com/LouisJenkinsCS • http://LouisJenkinsCS.github.io

EDUCATION

BLOOMSBURG UNIVERSITY OF PENNSYLVANIA, Bloomsburg, PA *Summer 2012 - Fall 2017*

Bachelor of Science (B.S.) in Computer Science GPA 3.0

RESEARCH EXPERIENCE

STUDENT RESEARCHER, Lehigh University, Bethlehem, PA *Summer 2016*

- **Project:** Concurrent and Scalable Built-in Hash Table for the Go Programming Language
- **Advisor:** Michael F. Spear
- **Grant:** National Science Foundation
- **Awards:**
  - Peer's Choice for Outstanding Project.
  - Honorable Mention for CRA 2017 Outstanding Undergraduate Researchers, sponsored by Microsoft Research.
- **Publication:** L. Jenkins, T. Zhou, & M. Spear, "Redesigning Go's Built-In Map to Support Concurrent Operations"
  Parallel Architectures and Compilation Techniques (PACT) 2017.
- **Summary:**
  - Designed and implemented a novel scalable lock-based concurrent map for Go's runtime and compiler.
  - Implemented with compatibility for Go map syntax; supports insert/lookup/remove and concurrent iteration.
  - Outperforms sequential map by up to 7x across diverse microbenchmarks, competitive against lock-free maps.

GOOGLE SUMMER OF CODE (STUDENT), Chapel, Cray Inc. *Summer 2017*

- **Project:** Distributed Data Structures
- **Mentors:** Engin Kayraklioglu, Michael Ferguson
- **Grant:** Google Summer of Code
- **Publication:** L. Jenkins, "RCUArray: An RCU-like Parallel-Safe Distributed Resizable Array"
  [Submitted] Chapel Implementers and Users Workshop (CHIUW-IPDPS) 2018.
- **Summary:**
  - Designed and implemented the first scalable ordered data structure for PGAS languages ($\approx$ 100x @ 3072 Processors).
  - Designed and implemented a novel scalable unordered data structure ($\approx$ 500x @ 3072 Processors).
  - Designed the Collections modules; all officially available as of Chapel version 1.16

STUDENT RESEARCHER, Bloomsburg University, Bloomsburg, PA *Fall 2017*

- **Project:** Introducing LLVM to the Java Virtual Machine
- **Advisor:** William Calhoun
- **Grant:** Professional Experience Grant
- **Summary:**
  - Implemented a prototype frontend to convert JVM Classfiles to LLVM Modules.
  - Explored the possibility of utilizing LLVM as backend and optimizer for JIT Compiler.
  - Designed and implemented proof-of-concept capable of running simple Java programs.

MISC. EXPERIENCE

INDEPENDENT STUDY, Bloomsburg University, Bloomsburg, PA *Fall 2016*

- **Project:** Open Source Software for Efficient Evaluation of Student Code
- **Advisor:** Drue Coles
- **Summary:**
  - Developed a free open source tool that helps automate the process of grading and leaving feedback for students.
  - Designed to promote a Write-Once Reuse-Anywhere philosophy of templated markups.
  - Implemented support for 169 languages and can be run on any platform with Java 8.

SKILLS

	Languages	Technologies
Novice	HTML/CSS/JavaScript, LaTeX, Python	Machine Learning, Web Development, Scripting
Intermediate	Go, Haskell, C++	Compiler & Language Design, Mobile Development
Advanced	C, Java, Chapel	High-Performance Algorithms & Data Structures

PROJECTS

- **Chapel-Atomic-Objects**
  - Designed software solution to scalable atomic operations on remote multi-word data.
  - Designed non-blocking distributed memory reclamation using quiescent states and epochs.
- **Moltar-OS - Hobby Operating System**
  - Developing an operating system in C and Assembly for the 32-bit x86 architecture for academic purposes.
  - Implemented virtual memory, interrupts, basic VGA and keyboard driver, and uniprocessor multitasking.