Connor T. Riley

Education

University of Connecticut, Storrs, CT **Bachelor of Engineering, May 2016**
Major: Computer Science and Engineering **GPA: 3.94**
Minor: Mathematics
School of Engineering Dean's List (Each Semester)
2014 Babbidge Scholar
Honors Program
Relevant Coursework: Compilers, Programming Languages, Operating Systems, Artificial Intelligence, Networking, Algorithms and Complexity, Theory of Computation, Introduction to Software Engineering, Data Structures and Algorithms, Introduction to Discrete Systems, and Object Oriented Design and Programming.

Research Interests: Optimization, Compilers, Programming Languages, Software Engineering, Computer Music.

Research Experience

Circle Packing, Professor Don Sheehy **Fall 2015 - Present**
- Senior thesis – in progress.
- Investigating the use of multiple circle packing algorithms in conjunction.
- Developing an application to allow users to create and manipulate a circle packing.
- Performing stereographic projections of circle packings onto a plane.

Synchronous Audio Playback, Professor Bing Wang **Fall 2015 - Present**
- Developing an Android application which, using Wifi Direct, transfers to and then plays music files simultaneously on multiple devices.
- Created a music player as a foundation for the application.
- Using material design to facilitate a modern user experience.

Center for Voting Technology Research, Professors Alexander Shvartsman, Laurent Michel, Alex Russell **Spring 2015 - Present**
Undergraduate Assistant
- Created database using Python, SQLAlchemy and Alembic to store card analysis data.
- Created and executed test cases for the election-card analysis tool.
- Investigated hexadecimal on memory cards to determine location of counters.
- Evaluated the functionality and security of various electronic poll book solutions.

Yelp Data Analysis, Professor Swapna Gokhale **Spring 2015**
- Created a graph where the vertices were users and the edges meant the users reviewed the same business.
- Calculated edge strength based on the similarity of user ratings.
- Created a graph where the edges connected users who were friends on the yelp network.
- Used both graphs to measure the likelihood of two or more friends giving similar reviews to a business.

Approximating Differential Equations in Matlab, Professor Maryann Hohn **Fall 2013**
- Implemented Euler's method to approximate differential equations.
- Implemented the classical Runge Kutta method to approximate differential equations.

Key Projects

C—Compiler, C++ **In Progress**
- Developed a C—to llvm compiler using flex to generate the scanner and bison to generate the parser.
- Implemented three pass semantic analysis.

Lambda Calculus Interpreter, Standard ML
- Created functions for alpha and beta reduction and the Y combinator.
- Wrote a Fibonacci function as a lambda expression with church numerals and used it to test the interpreter.

OS 161, C
- Implemented kernel functions for memory and thread handling.

- Wrote user functions to test kernel functionality.
- Implemented locks and condition variables.

Predicting Chart Performance for Music Tracks, Python
- Developed a web scrapper to list all URLs on Wikipedia's top 100 songs of the year page (for any particular year).
- Developed a tool to take a Wikipedia song URL and extract the length of the song.
- Compiled a dataset of song chart performance, by year, and song length.
- Using this dataset, I trained a linear regression based on song length and song title length to predict chart performance.

Other Programming Experience

Java - IDE: Eclipse   **3 Years**
- Developed a reminders application using the JHotDraw framework.
- Developed a maze represented by a graph using the Prim-Jarnik algorithm.
- Solved the 8-puzzle using Simulated Annealing.
- Created a game-playing agent using alpha-beta pruning.

Python   **6 Months**
- Analyzed machine learning algorithms using Scikit-learn.
- Implemented a server to allow clients to access a database via UDP.

Experience with: Smalltalk, Prolog, Lambda Calculus, MIPS, llvm, MATLAB, HTML, CSS, AQT, Emacs, Vim, Docker.

Work Experience

United Technologies Building and Industrial Systems – Otis Elevator Company, Farmington, CT   **Summer 2015**
Engineering Intern
- Developed an application to translate UI labels, stored in XML, into the spoken language selected by the user.
- Created an interface with a server to allow a user to download an XML file and upload the file after translation.
- Designed and implemented a user interface to display, and allow the user to alter, the original and translated phrases.

Cigna Corporation, Storrs, CT   **Fall 2014**
Technology Early Career Development Program – On-campus Developers Internship
- Utilized Tableau reporting software to improve internal security reports.
- Created Role Based Access Control Dashboard to improve employee onboarding.

Travelers Insurance Company, Hartford, CT   **Summer 2014**
IT Internship Program - Business Insurance Production Operations
- Responsible for implementation of optimized SQL to reduce CPU usage resulting in annual savings of $360,000 per year.
- Compiled module usage counts using JCL to evaluate impact of application sunsetting.
- Coordinated completion of mainframe system change requests.
- IT Intern Tech Challenge Winner – first of nine teams.
- Capstone Project: Analyzed existing corporate-wide IT collaborative capabilities and presented areas for improvement.

Activities

UPE UConn Chapter	**2014–Present**
• Secretary	**2015-Present**
Tutor for Data Structures and Algorithms	**2015-Present**
University of Connecticut Club Swim Team	**2012-Present**