Christopher L. Choi

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OBJECTIVE Motivated student with a background in Computer Science and Physics, interested in applying Machine Learning techniques to solve robot control problems.

EDUCATION

PhD Computer Science — May 2013 — May 2014 (1 year)
University of St Andrews, St Andrews, Scotland

Focused on Evolutionary Algorithms, specifically Genetic Programming and Genetic Algorithms. The research was in the area of automating parameter control either during or before the algorithm execution.

MSc Advanced Computer Science — September 2011 — September 2012 (1 year)
University of St Andrews, St Andrews, Scotland

Modules: Advanced Software Engineering, Advanced A.I., Advanced Network and Distributed Systems, Object Oriented Programming, Software Architecture, Language Perception, Web Technologies.

BSc Computational Physics — September 2007 — June 2011 (4 years)
HeriotWatt University, Edinburgh, Scotland

Modules: Computational Project, Remote Sensing and Energy Studies, Applied Quantum Theory and Spectroscopy, Physical Mathematics Physics

EXPERIENCE

Software Engineer Intern — September 2014 — Present (8 Months)
Silicon Valley Internship Programme (SVIP)

I worked at Cask Data where I implemented an Integration Testing Framework in Python. My second and current experience is at LoopUp, a call conferencing company where I am creating a fraud notification system, the system is currently being implemented in Python and Flask.

Research Assistant — September 2012 — May 2013 (9 months)
University of St Andrews, Fife, Scotland

Supervised by Dr Alex Voss, a researcher interested in innovative systems for social media analysis, I surveyed NoSQL databases, MongoDB and CouchBase in particular, where I presented my work at the International Symposium on Grids and Clouds (ISGC) in Taipei, Taiwan.

Physics Summer Internship — July 2009 — September 2009 (3 months)
HeriotWatt University, Edinburgh, Scotland

A ruby program was created that would allow researchers perform physics simulations across a number of Linux machines.

Bioinformatics Summer Internship — June 2009 — September 2009 (4 months)
University of Edinburgh, Edinburgh, Scotland

My responsibility was to help Dr T.Waibel analyze his sequenced data to identify key gene regulators in Taxol bio-synthesis found in Yew trees. Taxol (a.k.a Paclitaxel) is one of the major chemotherapy drug used to treat patients with lung, ovarian, breast, head and neck cancer.

Physics Summer Internship June 2008 — August 2008 (3 months)
Queen Mary, University of London, London, England

Two projects were completed. The first project involved modifying a computer program called Rivetgun to work under BOINC. The work required C/C++ programming and system administration under Debian Linux.

In the second project, I built temperature sensors to monitor the High Throughput Cluster at Queen Mary. Temperature values were then logged to a web based system monitoring software called Zabbix.

PROJECTS

evolve July 2014 — Present

An Evolutionary Algorithm library implemented in C, it can currently solve Symbolic Regression (a.k.a curve fitting) problems and it has approximately 10x the speed up over another project called playground.

playground September 2013 — Present

A meta-heuristic library implemented in Python. It features Genetic Programming, Genetic Algorithm, Particle Swarm Optimisation and Hill Climbing algorithms.

CRoPs July 2013 — Feburary 2013

A path planning algorithm that combines Potential Fields and Probabilistic Roadmaps to guide a swarm from an initial configuration to a final configuration.

AWARDS

2nd Place, HackKings Hackathon Feburary 2014

My team and I created Streamy, a product where it identifies top news and uses Twitter to locate and target users close to the news worthy locations to stream live video from their phone. Using only HTML5 and JavaScript we were able to access the user's phone camera directly and stream the video back to a centralized server without requiring the user download any phone specific app. For a demo check out this demo:
http://www.youtube.com/watch?v=JjMc1OaKEU0.

PRESENTATIONS

- Choi, C. (2014, Janurary). *Parameter Setting in Genetic Programming?* Presented at the Computer Science Department at University of St Andrews. As part of my 1st year PhD review.
- Choi, C. (2013, July). *What am I doing?* Presented at The Burn. As part of the PhD program at the School of Computer Science.
- Choi, C. & Voss, A. (2013, March). *Twirp: a Twitter Mining Workbench, and experiences with NoSQL databases*. Presented at the International Symposium on Grids and Clouds (ISGC), in Taipei, Taiwan.
- Voss, A. & Choi, C. (2013, Janurary). *Benchmarking MongoDB and Couchbase No-SQL Databases*. Presented at JISC (London), an internal face to face meeting with the Analysing Social Media Collaboration.