SEAN EDMUND BURKE

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EDUCATION

Massachusetts Institute of Technology **Cambridge, MA**
Masters of Engineering in Computer Science GPA: 5.0/5.0 *May 2014*
B.S. in Electrical Engineering and Computer Science GPA: 4.5/5.0 *May 2013*

Relevant Coursework: Computational Cognitive Science, Biomedical Computing, Intro to Machine Learning, Cognitive Robotics, Design and Analysis of Algorithms, Computer Graphics, Computation Structures, Artificial Intelligence, Software Construction, Introduction to Algorithms, Probability and Random Variables, Linear Algebra, Mathematics for Computer Science

EXPERIENCE

Pattern Inc. **Boston, MA**
Principal Software Technologist *November 2015 – Present*
Designed and developed algorithms for a new distributed hypergraph database system in C++. Specifically focused on the system's subgraph matching part of the system. Took several concepts and ideas from graph systems and research papers to develop efficient and accurate subgraph matching and subgraph search algorithms to run in a highly performant distributed system. Also worked as a software consultant for clients, which included building a machine learning scoring system in a Python REST API for an up and coming mobile fitness app. Also included building graph infrastructure and developing NLP models for a Java application to analyze biotech articles in order for companies to use to generate leads.

Localytics **Boston, MA**
Software Engineer-Backend *July 2014 – October 2015*
Created systems for mobile app companies to interact with their users and provide analytics on their behavior. Implemented horizontally scalable systems leveraging Amazon Web Services, Scala Play framework, and the Akka concurrency framework. Built two Scala Play REST API's from scratch that handle thousands of requests per second. Developed applications across several micro services encompassing the entire messaging pipeline, from customer request to user segmentation all the way through to delivery. This included push messages, in-app messages, and email.

Massachusetts Institute of Technology **Cambridge, MA**
Research Assistant: Model-based Embedded and Robotic Systems Lab, CSAIL *June 2013 – May 2014*
Research in reactive integrated motion planning and execution. Focusing on the trajectory adjustment capability for motion execution of robots performing tasks in unstructured environments. Implement techniques on robot hardware using the OpenRAVE simulation environment.

Teaching Assistant: Design and Analysis of Algorithms *February 2013 – May 2013*
Taught a recitation section once a week, held office hours, and answered students' questions online. Also designed homework and test problems, and created recitation notes.

JPMorgan Chase & Co **New York, NY**
Application Developer Intern *June 2012 – August 2012*
Helped develop, test, and debug a legacy Java application used by traders for intra-day risk management.

LEADERSHIP / ACTIVITIES

MIT Athletics **Cambridge, MA**
Club Hockey Captain *2009 – 2014*
Varsity Lacrosse *2009 – 2013*

Sigma Chi Fraternity **Boston, MA**
President, Risk Manager, House Manager, Webmaster *September 2010 – May 2013*

SKILLS

Technical: Scala, C++, Python, Java, Matlab, MySQL, bash, git, Amazon Web Services, Play, Akka, Json, Machine Learning, memcache, redis, sbt; basic Ruby, Rails, R, C#, Spark, Javascript