ALEXANDRA KEARNEY

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OVERVIEW

A University of Edinburgh second year undergraduate student with experience in machine learning, and biomedical robotics.

EDUCATION

ARTIFICIAL INTELLIGENCE AND COMPUTER SCIENCE, University of Edinburgh
Expected Graduation: 2016

HONOURS HIGH SCHOOL DIPLOMA, Brentwood College School
Graduation: 2012

HONOURS & AWARDS

ANITA BORG MEMORIAL SCHOLARSHIP: EMEA
(2014) | Google

A scholarship for 40 post-secondary students in Computer Science in Europe, the Middle East, and Africa.

Awarded based on the strength of each candidate's academic background, passion for increasing the involvement of women in computer science, and demonstrated leadership.

PEOPLES' CHOICE POSTER
(2013) | British Computing Society: Lovelace Colloqium

Best poster, as chosen by attendees.

MOST SURPRISING PROJECT: OBJECT ORIENTED PROGRAMMING
(2013) | University of Edinburgh

Awarded by the object oriented programing course organizers for a stock market analysis app.

NATIONAL ADVANCED PLACEMENT SCHOLAR WITH DISTINCTION
(2012) | College Board

For performance on college-level exams in high-school.

TEAMWORK AWARD: YOUTH ROBOTICS
(2009) | First Lego League Smart Move

Recognizes a youth robotics team that is able to accomplish more together than they could as individuals through shared goals, strong communication, effective problem solving and excellent time management.

BEST PROJECT: YOUTH ROBOTICS
(2008) | First Lego League Climate Connections

This award recognizes a youth robotics team that utilizes diverse resources to formulate an in-depth and comprehensive understanding of the problem they have identified.

2ND PLACE: YOUTH ROBOTICS
(2006, 2007) | First Lego League Ocean Odyssey and Power Puzzle

For excellence and innovation in both the programming and building of a robot; for a well considered, well researched topic.

PUBLICATIONS

A.J. Koop, **A. Kearney**, M. Bowling, P.M. Pilarski, "Dealing With Changing Contexts In Myoelectric Control," *Proc. Of Mec'14: Myoelectric Controls Symposium*, Fredericton, New Brunswick, August 18-22, 2014, Pp. 117-120.

A. Kearney, A. Koop, M. Bowling, P.M. Pilarski, "Partition Tree Learning for Improved Control of Myoelectric Prosthetics," *8th Annual Workshop for Women in Machine Learning*, Co-located with NIPS, Lake Tahoe, Nevada, Dec. 05, 2013. (Oral and poster presentation.)

A.L. Edwards, **A. Kearney**, M.R. Dawson, R.S. Sutton, and P.M. Pilarski, "Temporal-Difference Learning to Assist Human Decision Making during the Control of an Artificial Limb," *1st Multidisciplinary Conference on Reinforcement*

Learning and Decision Making (RLDM), Oct. 25–27, Princeton, New Jersey, USA, 2013. 5 pages.

EXPERIENCE

RESEARCH INTERN, Reinforcement Learning & Artificial Intelligence Lab
(2015) University of Alberta | Supervisors: Patrick Pilarski PhD, Rich Sutton PhD.

- Created experiments to compare a variety of machine learning algorithms on prosthetic training tasks
- Performed a la

RESEARCH INTERN, Rehabilitation Robotics Lab
(2014) University of Alberta | Supervisors: Patrick Pilarski PhD, Rich Sutton PhD.

- Created a machine learning experiment framework for the Robot Operating System
- Ran experiments to predict user's intent when controlling a bionic limb

HACKATHON COORDINATOR, University of Edinburgh
(2014) | University of Edinburgh

- Coordinated a week-long hackathon at the University of Edinburgh
- Gathered sponsors, booked venues, marketed the event to students.

RESEARCH INTERN, Reinforcement Learning & Artificial Intelligence Lab
(2013) University of Alberta | Supervisors: Patrick Pilarski, PhD, Rich Sutton PhD.

- Built a myoelectric control system for a bionic third-limb.
- Collected and evaluated data to asses a novel meta-learning algorithm.
- Contributed to publications; presented results at an international workshop.

HIGSCHOOL INTERN, Reinforcement Learning & Artificial Intelligence Lab
(2012) University of Alberta | Supervisor: Joseph Modayil PhD.

- Built a background subtraction for use by people with disabilities.
- Designed a human-machine interaction installation for deployment in the Glenrose rehabilitation hospital.

HIGHSCHOOL INTERN, Reinforcement Learning & Artificial Intelligence Lab

(2011) University of Alberta | Supervisors: Thomas Degris PhD, Patrick Pilarski PhD.

- Learned and applied machine learning techniques without prior knowledge.
- Built and tested novel multi-agent system on robotic platform.
- Demonstrating benefits of letting agents learn from other's actions.

PROJECTS

INDIE ANNDROID
(2015) | Personal Project

- A collection of tools for use on the indieweb
- An open-source python app for blogging

TALL TAB
(2014) | Software Engineer Large Practical

- Made a web-crawler to collect news stories from across the web
- Used natural language processing to summarize stories and extract keywords
- Clustered stories based on underlying events.

PROJECT OMAHA: STOCK MARKET PREDICTION
(2013) | Smart Data Hackathon

- Built a web scraper to collect historical stock data and relevant news headlines.
- predicted daily market movement.
- Featured in hackathon video: http://goo.gl/YNia4y

PUBLIC SPEAKING

EDINBURGH PRE-WIRED WORKSHOP: INTRODUCTION TO MACHINE LEARNING
(2014) | Workshop for Local Students Under 19 Years of Age Interested In Computing

UNDERGRADUATE RESEARCH: OPPROTUNITIES AND EXPERIENCES
(2014) | Edinburgh university hoppers: lunch and learn

PARTITION TREE LEARNING FOR IMPROVED MYOELECTRIC CONTROL
(2013) | Women in Machine Learning Workshop

LEARNING OVER MULTIPLE TASKS FOR MYOELECTRIC PROSTHETICS
(2013) | BLINC Research Group Presentation

CONTEXT LEARNING FOR MYOELECTRIC PROSTHETICS
(2013) | Reinforcement Learning Group Summer Tea Time Talks

PREDICTION FOR ROBOTIC PROSTHETICS
(2013) | Glenrose Rehabilitation Summer Research Presentation

CONTEXT LEARNING FOR MYOELECTRIC PROSTHETICS
(2013) | Reinforcement Learning Group Summer Tea Time Talks

PREDICTION FOR ROBOTIC PROSTHETICS
(2012) | Glenrose Rehabilitation Summer Research Presentation

JEKYLL AND HYDE: MULTI AGENT CONCURRENT LEARNING
(2011) | Manning Awards: Celebration Of Innovation

LEADERSHIP

President: Edinburgh University Hoppers
(2014-Present) Edinburgh University Women in Technology Club
Organize, develop, and run events for women in Computer Science.

Vice President: Edinburgh University SocieTEA
(2015-2016)
Organize, develop, and run events for people who like tea.

Hoppers Committee Member
(2012-2014) Edinburgh University Women in Technology Club
Gave talks and developed workshops for women in Computer Science.

Pre-Wired Mentor
(2013-2014) Edinburgh University Young Scientific Researchers' Association

- Helped young U18 students learn programming skills.
- Gave a hand-written digit recognition tutorial to students.

Seminar Coordinator
(2012-2014) RLAI Tea Time Talk Series
Organized summer talks for the RLAI lab at the University of Alberta.

Tea Historian
(2014-2015) Edinburgh University SocieTEA
Recorded society events and teas tasted.

Head of Informatics Research Group
(2012-2013) Edinburgh University Young Scientific Researchers' Association
Organized a group of undergraduates working on research projects.

High School Robotics Programme Development Assistance
(2011-2012) Brentwood College School
Assisted in setting up a robotics programme for high school students.

Model United Nations Captain
(2011-2012) Brentwood College School Debate Team
Organized and ran a high-school Model United Nations Team.

General Assembly Chair
(2012) Shawnigan Lake School Model United Nations Conference
Created an international crisis for delegates to resolve over a weekend-long Model United Nations summit.

Travel Prefect
(2010-2012) Brentwood College School: Hope House
Keeper of passports; maker of itineraries.

Information technology prefect
(2010-2011) Brentwood College School: Hope House
Fixed the computers and printers at school.