

JOHN CHIA

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Profile

I wear many hats. I'm a Canadian with some computer expertise and an outdoorsy side. I'm a world wanderer, a deep thinker and seeker of truth.

Since graduating from UBC in 2012, I've consulted for a major toy manufacturer in Toronto, volunteered on organic farms across Canada, and spent quite a fair amount of time self-studying finance. More recently, I spent six months studying Mandarin in Taiwan and visited a few major cities in China (Shenzhen, Chongqing, Chengdu and Shanghai).

My masters thesis was concerned with applications of a machine learning algorithm called contextual multi-armed bandits. For the culmination of my undergraduate degree, I was part of a group of three that developed drawing robot in the form of an anthropomorphic arm.

Recent Projects

"DJ Dog". Prepared for a Toronto-based toy manufacturer. Prototype of an electronic device designed to simulate the experience of a DJ turntable. Two spinning discs were used to playback recorded sounds. Handled circuit design, physical layout and embedded programming.

HSK level predictions for Chinese Wikipedia articles. Attempted to assign each Wikipedia article an HSK level based on the vocabulary used in the article.

Large-scale clustering for eBay auctions. Work involved large scale datasets of eBay auctions numbering in the hundreds of millions. Adapted a machine learning technique called locality-sensitive hashing to perform duplicate detection. Experimented with various clustering methods including hierarchical clustering.

Facial expression recognition. Class project for computer vision. Used machine learning (a combination of SVM and logistic regression) to learn which facial expression tend to indicate which emotion.

Drawing robots. Construction of Hardware built using parts from a heavily modified lynxmotion kit. Electronics and software were custom including from scratch functionality for inverse kinematics and trajectory planning.

Experience

Technical Consultant, Crowd Muscle Research Vancouver, Canada 2011-2012
Designed and numerically validated core algorithms. Used **PCA** to develop an indexing algorithm that assigns a single score to questionnaire respondents based on the largest singular value in a response set. Used **RANSAC** with measures of randomness (e.g. entropy and autocorrelation) to assess whether a respondent was trying to game the system or not.

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Research Assistant, Advanced Ecommerce Research Systems Victoria, BC
2010-2011

Used **locality-sensitive hashing** to perform $O(n)$ auction clustering and experimented with using **multi-armed bandits** to solve an auction optimization problem.

Engineering Intern, Advanced Micro Devices Toronto (Markham), Canada 2008
Developed tools that supported the design verification team. Developed primarily in **perl**, **tcsh** (not my choice), and **bash**. Web reports were generated using **PHP** (also not my choice) and **postgresql**.

Web developer (contract), Ryerson University Toronto, Canada 2007
Developed a web-based teaching aid for forming groups of students. It used the results of a personality test to balance the groups' personalities. Written using a mixture of perl, shell, and as little external libraries as possible (at the request of the professor).

Starnix Inc, Toronto, Canada 2000-2006
This small four-man shop trained me for Linux development. Among the larger projects I worked on was an internationalization framework in HTML::Mason (perl/html inlined) that allowed translations to be performed inline on the site. I was also package maintainer for the internal Linux distribution based on RedHat that used apt for RPM at a time when yum was still unknown.

Education

University of British Columbia, Vancouver, Canada — **M.Sc.** Computer Science 2012
Ryerson University, Toronto, Canada — **B.Eng.** Electrical Engineering 2009

Referrals

Available