

## JEFF CAMERON

Jeff Cameron is a Software Engineer based in San Francisco. He is looking for the next big challenge.

### Skills

#### LANGUAGES

C, C++, Java, Python, Javascript, C#, PHP, SQL, Visual Basic, Tcl/Tk

#### WEB

HTML, PHP, node.js, ASP.NET, Ajax, Apache configuration, Java servlets

#### CLOUD

Longtime AWS user, Condor, Google MapReduce, Protocol Buffers, client/server architecture

#### DATABASES

MySQL, Microsoft SQL Server, Oracle, Sybase, Google BigTable, DynamoDB, LevelDB

#### MACHINE LEARNING

Neural networks, deep learning, genetic algorithms, decision trees, heuristic search algorithms, pathfinding, classification. Strong math background.

#### MORE

Unit testing, version control, build systems, devops, open source project management, well practiced with countless libraries and APIs

# Work Experience

## **EXPEDIA** *Tech Lead – Voice*

2015 – Present

Tech lead of the Voice team, responsible for Expedia's presence on Alexa, Google Assistant/Google Home, Cortana, Facebook Messenger, and a number of smaller platforms. Consistently grew the team from 1 engineer to about 10.

I joined Expedia originally as a Mobile engineer, working on Expedia's mobile app. I started tackling tough backend tasks that were holding back the development of the app, and from there got to know Expedia's whole stack. I started the Voice team after a hackathon, releasing the first ever Alexa app capable of financial transactions. My team's work on conversational AI and neural networks was featured in the keynote talk at Expedia's annual conference in Las Vegas, by the President of Expedia.

## **GOOGLE** *Search Ranking Engineer*

2012 – 2014

I focused on the heart of Google's search engine: ranking. The systems that I built had a direct effect on the ranking logic for Google's main property, web search. I then partnered with Google Images and YouTube to re-tune their rankings along similar lines. Additionally, I took full ownership of Google's app search property, which helps users find apps for their mobile devices. I contributed heavily to Google's app-indexing initiative to crawl and index the contents of mobile apps.

**SCOTIA CAPITAL** *Equity Trader & Programmer*

2010 – 2012

Licensed equity trader (TTC, CPH, CSC) responsible for operating high-frequency (HFT) strategies of my own design. Discovered and implemented several consistently profitable strategies. Designed scalable systems to cope with huge amounts of stock-market data in real time, allowing my team to scale up from trading a handful of stocks to hundreds. Introduced and popularized many collaborative development tools: source control (SVN), automated build (Ant), continuous integration (Google Buildbot), bug tracker (InDefero), and more.

**GOOGLE** *Software Engineering Intern*

2009

Interned as a software engineer with the Web Search team, where I implemented a new component for Google's document-scoring system.

**SCOTIA CAPITAL** *Trading Floor Intern*

2007 – 2009 (3 terms)

Used databases and web programming tools to create successful business intelligence tools that are now used by senior managers. Developed and tested trading strategies that make use of a variety of artificial intelligence techniques.

**NATIONAL RESEARCH COUNCIL OF CANADA** *Research Assistant*

*2005 – 2006 (2 terms)*

Used data-mining techniques to investigate climate change, genetics, proteomics, and other fields. Developed interactive virtual reality software from scratch using OpenGL. Maintained parallel versions of C/C++ software on Windows and Linux. Used Linux clusters and Condor for high-throughput computing.

**LIFEGUARD & SWIMMING INSTRUCTOR**

*2002 – 2005*

Taught classes at several pools in the Ottawa area. Qualifications: CPR, defibrillator, NLS, YMCA instructor, Red Cross instructor. Had particular success communicating with and handling autistic children, attracting a surge in enrollment from across the Ottawa region.



# Open Source Hacking

## GOOGLE AI CHALLENGE

Founded the [Google AI Challenge](#), a series of interactive online programming contests.

Participants write a computer program that plays a strategy game. The programs compete in a round-the-clock automated tournament with continuously updated rankings displayed on a web-based leaderboard.

Early in the project, I wrote nearly all the code myself, including the whole website in PHP from scratch, a massively scalable backend for running the tournament on a cluster of servers, a system that securely compiles and executes arbitrary user-submitted code in almost any popular programming language, and several new algorithms for game scheduling, optimal opponent selection, and computing rankings.

Guided the project through rapid growth, attracting 13,000+ participants from nearly every country in the world, and millions of page views. Negotiated a sponsorship agreement with Google to finance up to 48 servers at a time. Recruited and motivated an all-volunteer team to coordinate the work of dozens of contributors to this [open source project](#).

## ANYONE BUT

I make these websites every time Canada has a federal election. The sites use my [open-source election forecasting model](#) to calculate strategic voting recommendations for each of Canada's 338 voting districts. [AnyoneButTrudeau.ca](#), [AnyoneButScheer.ca](#), and [AnyoneButHarper.net](#).

## SOCIAL NETWORK ANALYSIS

Author of [Commissar](#), a chatbot that [organizes gaming clans](#). The bot watches interactions between hundreds of gamers, automatically detects cliques, and even picks out the correct ringleader of each clique. The bot assigns each player a rank based on Harmonic Centrality, and connects them into a "chain of command" using the Minimum Spanning Tree.

## **GALAXYATLAS.NET**

Explore the stars in smooth 3D. Uses real star data from the European Space Agency's Gaia satellite. Uses a new algorithm to efficiently render 1B stars in real-time, in a web browser, even on low-powered mobile devices.

## **PLUTO'S MOONS**

I wrote a custom n-body simulator in Python to simulate the orbits of Pluto and its 5 known moons. I found a stable orbit that could contain a new unseen moon. When New Horizons visited Pluto in 2015, it found no new moons at all. Failed prediction!

## **GAME THEORY**

Author of computer programs that play chess, checkers, and other strategy games.

## **NATURAL LANGUAGE PROCESSING**

Created a system that gathers and analyzes news articles & social media in real time to extract various insights. Presented this work at the Canadian Security Traders Association (CSTA) conference 2014.



**EDUCATION**

University of Waterloo — Bachelor of Mathematics (Computer Science) 2005 – 2010

**LANGUAGE**

Fluent in English and French

**SPORTS & HOBBIES**

Double provincial gold medalist in Alpine Ski Racing (OFSAA). Enjoys alpine ski racing, biking, rugby, track & field, ski jumping, curling, swimming, sailing, and other sports. Plays and writes songs for the guitar and piano. Extensive first-aid training. Several awards in programming, mathematics, athletics, and music.

**WORK STATUS**

I hold an H-1B visa, which makes it easy for me to join your company. I am currently employed by Expedia Group.

**Contact**

[cameron.jp@gmail.com](mailto:cameron.jp@gmail.com)