

Sankarshan Mudkavi

203, Albert Street
Waterloo, ON, Canada N2L 3W3

www.smudkavi.com

smudkavi@uwaterloo.ca

(226) 600-6809

I am a mathematical physics major at uWaterloo who is curious about how the universe works and have found code and math to be a great way to explore it; When I'm not on the macdev, math, physics and chromium IRCs trying to figure out a few tricky problems, I can usually be found playing chess or cooking.

Summary of Qualifications

• *Languages*

- **C, C++**: Used for its speed and extensive stdlib
- **Obj-C, Swift**: Used extensively for OSX
- **Python**: Worshipped for its readability and awesome libraries
- **Scala**: An amazing combination of functional and object oriented programming
- **Java**: Picked up because C does not always cut it for the industry
- **Javascript**: Admired for the amazing power of asynchronous callbacks
- **Ruby**: Used in personal projects for the amazing scaffolding of the rails engine
- **MATLAB, Mathematica**: Workplace experience
- **HTML, CSS and L^AT_EX**: Functional use and familiarity

• *Tools*

- **OSX, Linux, Windows**: Programmed heavily in UNIX environments
- **Node.js, Ruby on Rails, Google AppEngine**: Used to deploy live web applications
- **Apache Hadoop, Hive, Sqoop, Spark and Azkaban**: Used to handle massive amounts of data
- **CDH and HDP**: Used both cloudera and hortonworks during my term at paytm labs
- **Git, vim, sublime text**: Let the emacs vs. vim flame wars begin

• *Databases and Key Value Stores*

- **MySQL, PostgreSQL, MongoDB, Redis, HBase, HDFS**

Work Experience

Cofounder (CTO), Okeylabs Inc. Kitchener

Current

- We are a microproximity authentication company currently in closed beta incubated in the velocity garage
- Extensively dealt with the kernel layer, sockets, syscalls, Cocoa and various other published C APIs
- Architected, engineered and built the OSX application
- Set up and maintained the backend servers and APIs for the iOS, OSX and website

Data Scientist and Engineer, Paytm Labs, Toronto

Aug 2014 - May 2015

- Actively contributed to data science and engineering having been with the company from inception
- Acted as liaison to the CEO and parent company in a managerial capacity involving overseas business trips
- Extensively used several open source tools and Hadoop stacks to perform data pipelining and analysis
- Used MLlib to scale prototype algorithms written in python
- Performed resiliency testing of the Akka framework for building scalable software platforms

Associate Security Consultant (Intern), Security Compass, Toronto

Jan - Apr 2014

- Pentested various client applications on web and mobile platforms using BurpSuite, wireshark, metasploit.
- Reverse engineered apps on various mobile platforms and analyzed the source code for security flaws
- Wrote professional secure coding documents, attended CTFs, learnt about the SDLC and cryptography
- Conducted research on security content for web and mobile applications

Research Intern, Syracuse University, NY

May - Aug 2013

- Researched evolutionary algorithms with applications to multi-objective optimization in wireless sensors
- Modeled mobility and tracking of targets within wireless sensor clusters
- Applied existing evolutionary algorithms to sensor deployment based on problem specifications
- Analysed behavioral patterns to detect deviations by training sensor networks using obtained data

Projects

- **NumPy**: Contributed bugfixes and features to the existing NumPy release.
- **Atlasnav**: An optimal route planning web-app written in python (django) and javascript by a team of four
- **Ballstorm**: Interactive graphical game with a physics engine using the C++ allegro library
- **Improper time**: A sidescroller game with multiple levels written entirely in python using the pygame library
- **CloG**: Basic web blog using Google AppEngine as a back-end framework as part of CS 253
- **DuckDuckShogi**: A rudimentary functional search engine as part of CS 101
- **Quacker**: Semi-functional twitter clone website built through the use of the Ruby On Rails tutorial book

Education

Candidate for Bachelor of Science

Sept 2012 - Present

- Honours Mathematical Physics, University of Waterloo

Coursework

- PHYS 236: Computational Physics
- CS 373: Programming a Robotic Car (Udacity)
- CS 253: Web Application Engineering (Udacity)
- CS 212: Design of computer programs (Udacity)
- CS 191x: Quantum Computation (Berkeley, edX)

Awards

- University of Waterloo President's scholarship 2012
- Indian National Mathematics Olympiad Scholar 2011

Volunteer Experience

Formula Motorsports, University of Waterloo

Sept - Dec 2012

- Experience with shaping and constructing sheet metal parts
- Gained knowledge of differentials, aerodynamic packages, carbon fibre structures

Wave Robotics, University of Waterloo

2012 - Present

- Used machining tools to construct disk brakes for the autonomous vehicle
- Soldered wires and constructed mounts for the autonomous vehicle

Extracurricular

Science Orientation Leader, University of Waterloo

2013

- Responsible for overnight safety as well as event set up and tear down

Undergraduate Physics Club, University of Waterloo

2012 - Present

- President: Fall 2014
 - Responsible for organization, delegation and smooth functioning of the club
 - Member of the board of the Science Society
- Vice President: Spring 2014
 - Responsible for organization, delegation and smooth functioning of the club
- Information officer: Fall 2013
 - Responsible for the dissemination of the information about club to new students
- First year representative: Fall, Winter 2012
 - Reported freshman opinions of the club and physics department to the executive board