Vaastav Anand

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TECHNICAL SKILLS

Languages	: C++, Golang, Python, C, Java, Julia, R, JavaScript, CUDA
Tools	: GDB, IntelliJ, Eclipse, Visual Studio, Git, Perforce
Others	: SQL, Qt, Unix, Gtest, Boost Test

WORK EXPERIENCE

Undergraduate Research Assistant, UBC CS NSS Lab   **May 2018 – Aug 2018**
- Developed Dara, a model checker for checking safety properties in distributed systems.
- Updated the API of GoVector, an open source vector clock logging library in Go.

Software Engineering Intern, MODS Team, NVIDIA (C++)   **May 2017 – Aug 2017**
- Implemented memory repair sequences as scripts to repair bad parts of High Bandwidth Memory (HBM). This resulted in increasing GPU yield.
- Designed, developed and implemented a CUDA based linpack test to stress every bit of memory to weed out GPUs with bad memory in the early stages of production.
- Designed and deployed an internal website that reported every release version of the MODS application, the last change in the release and a link to download the release.
- Ported CUDA threading stress tests from CUDA teams to MODS.

Software Engineering Intern, MODS Team, NVIDIA (C++)   **May 2016 – Aug 2016**
- Implemented a synchronization option for CUDA based linpack stress tests in MODS to synchronize CUDA kernel launches within 30μs across multiple GPUs in multi-GPU systems like DGX systems.
- Ported MODS code and windows builds to msvc140 from msvc90 to enable C++11.

Software Developer, Sequoia, Thinkbox Software (C++)   **Sep 2015 – Apr 2016**
- Designed, developed and implemented the frontend and backend of the 3D PDF export option in Sequoia which allowed users to export their 3D models in PDF files by implementing a writer class for the U3D file format.
- Implemented import options for Lidar point cloud file formats of scanners from Riegl and Zoller + Fröhlich.
- Implemented binary string obfuscation making the licensing system more secure.
- Ported Unit tests from Boost Test Framework to Google Test Framework.

Research Assistant, Interdisciplinary Speech Research Lab (Python)Nov 2017 – Apr 2018
- Created a game that does pitch detection to measure the accuracy of pitch of phrases and words in tonal languages.

Teaching Assistant, UBC CS Department   **Sep 2014 – current**
- Previously a TA for Intermediate Algorithm Design, Computer Systems courses over 9 different school terms. Currently a TA for the undergrad Distributed Systems course.
- Lab Planner and Lead TA for CPSC 121 Models of Computation in Summer 2015.

PROJECTS

Dara: Hybrid Model Checking of Distributed Systems (Golang)   **May 2018 – current**
- Model checker that combines the speed of a traditional model checker with the realism of an implementation level model checker to find heisenbugs in distributed systems
- 2 page abstract published at FSE'18 in the Student Research Competition Track.

GoVector : Vector Clock Logging Library (Golang)   **May 2018 – current**
- A logging library which implements the vector clock algorithm.
- Re-structured the source code and re-designed the API for a v1.0 release and for future extensibility. Main maintainer of the library since May 2018.

HACKATHONS

NwHacks (Python)   **Feb 2016**
- Created a Python application that calculates how similar any 2 given songs are using their MIDI representation and lyrics.

Microsoft KINECT Hackathon (C#)   **Nov 2014**
- Programmed an AI called JOKER with the ability to understand specific voice command and carry out the corresponding instructions using the Microsoft Kinect.

EDUCATION

MSc, Computer Science, University of British Columbia   **Sep 2018 – current**
- Working under the supervision of Dr. Ivan Beschastnikh

BSc, Computer Science, University of British Columbia   **Sep 2013 – May 2018**
- ACM ICPC PacNW Regional Contest 2017 Division 2 Champion

Undergraduate Research Opportunities Conference, University of Waterloo   **Oct 2015**
- Worked on a mini research project of protein identification in mass spectrometer data.

Vancouver Institute of Visual Analytics   **Jun 2015 – Apr 2016**
- Visual Analytics 101: Tools, Techniques, and Theory
- VA102: Applications of Visual Analytics

Massive Open Online Courses (MOOCs)
- Neural Networks and Deep Learning by deeplearning.ai on Coursera
- CS344 Intro to Parallel Programming by NVIDIA on Udacity

AWARDS & ACHIEVEMENTS

2nd Place, FSE'18 Student Research Competition   **Nov 2018**
SIGSOFT CAPS Award   **Aug 2018**
UBC International Tuition Award   **Aug 2018**
Work Learn International Undergraduate Research Award   **May 2018**
Trek Excellence Scholarship   **Jan 2017, 2018**
CS Student Service Award   **Sep 2015**
UBC Faculty of Science International Student Scholarship   **Jan 2015, 2018**
Dean's Honor List   **May 2014, 2015, 2017**

VOLUNTEERING

Undergrad Rep, Program Experience Committee, CS Dept.   **Sep 2014 – Dec 2016**
- Assisted faculty members in improving student experience in the CS Department.

SKILLS & INTERESTS

Writing   : Writing poems and short stories
Hobbies   : Learning new languages, playing soccer and playing the piano
Sports   : Cricket & Soccer. Competed as part of U16 and U19 school team.
Languages   : English, Hindi, Italian, French, Bengali, Punjabi, Urdu