VINEET KUMAR

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917 Avenue de Melrose, Montreal, QC, Canada - H4A 2R3

- **6 years of relevant experience** in software design and development. | **M.Sc Computer Science**, McGill University.
- Programming languages - *Proficient:* Python, C++, Java | *Prior experience:* X10, MATLAB.

WORK EXPERIENCE

INRO December 2014 - present
Senior developer *Montreal, QC, Canada*

- Contribute to research and development of new features in INRO's two major products, Emme and CityPhi.
- Built a new matrix calculator (in **Python** and **C++**) for Emme.(*http://bit.ly/1N5geA8*)
  - Achieved **1.5x** to **30x** speedup depending on expression details and hardware resources.
  - Wrote a new parser and evaluator for Emme's matrix expression language.
  - Built a memory management system to efficiently handle computations on matrices over 1GB in size.
- Designed and built tools for data analysis of GTFS and travel smart-card data (in **Python**).
  - These tools can do analyses like actual schedules, boardings and alightings at each stop, stop activities, etc.

ISENCORE Technologies September 2013 - December 2014
CTO and co-founder *Montreal, QC, Canada*

- Implemented (**in C**) the 3D object discretization module for **Quirdity**, ISENCORE's 3D simulation engine.
- Won **first prize** in the **Mcgill Dobson cup** 2014 startup competition.
- Delivered the **winning pitch** to get selected as **one of the 20 startups worldwide** to present at SLUSH 2014.

McGill University January 2012 - April 2014
Research and Teaching *Montreal, QC, Canada*

- **Research Assistant, Sable Lab** - My research included program analysis and static compilation of dynamic languages.
  - Designed and developed (**in Java**) MiX10 : a MATLAB to X10 compiler for high-performance, under **Prof. Laurie Hendren's** supervision and with direct inputs from the X10 **design team at the IBM T.J. Watson research center**.(*bit.ly/1sZ8aqJ*)
  - Achieved **7 times (mean) faster** performance compared to the standard MATLAB implementation.
  - Discovered **2 bugs** and a **severe performance bottleneck** in the X10 compiler.
- **Teaching Assistant** - Program Analysis and Transformations, Compiler Design, and Introduction to Computer Systems.

Infosys Technologies Ltd. September 2008 - August 2011
Senior Systems Engineer *Pune, India*

- **Led** a team of 4 for **deployment performance management** for AT&T's online and mobility frontend and backend applications.
  - My team's job was to design and develop (**in C**) performance test scripts, analyze results, and troubleshoot performance issues.
  - Worked on 8 projects and they all exceeded performance SLA under peak loads.

Sun Microsystems January 2007 - May 2008
Intern - Student Tech Lead, APAC region/Campus Ambassador *Bangalore, India*

- Promoted from being one of the **only 27 Campus Ambassador across India** to one of the **only 5 Tech Leads worldwide**.
  - **Taught** a course on OpenSolaris at the university. Conducted webinars and developed tutorials for ambassadors worldwide.

PUBLICATIONS AND TALKS

- *Publication:* Vineet Kumar and Laurie Hendren. MiX10 : Compiling MATLAB to X10 for High Performance. In Proceedings of the 2014 ACM International Conference on **Object Oriented Programming Systems Languages & Applications (OOPSLA '14)**.(*bit.ly/1sft0PU*)
- *Talk:* Vineet Kumar and Laurie Hendren. MiX10 : Compiling MATLAB for high performance computing via X10 . 12th **Compiler-Driven Performance Workshop** at **CASCON 2013**.(*bit.ly/1hXms8N*)
- *Publication:* Vineet Kumar and Laurie Hendren. First steps to compiling MATLAB to X10 . In Proceedings of the 2013 ACM SIGPLAN X10 Workshop, **X10 '13** co-located with **PLDI 2013**.(*bit.ly/18owBUI*)

EDUCATION

McGill University April 2014
M.Sc. in Computer Science (CGPA: 3.56/4.00) *Montreal, QC, Canada*

- Master's thesis reviewed as **"Excellent"** by the external reviewer.

SASTRA University June 2008
B.Tech. in Computer Science & Engineering (CGPA: 8.93/10.00) *Thanjavur, India*

- Won the Dean's list scholarship for being among the **top 10%** students in the University.

SELECTED OTHER PROJECTS

- Analysis to identify complex numerical values for MATLAB programs (COMP 621 Program analysis, individual).(*bit.ly/15SYKmC*)
  - Developed a language to express information propagation through library function calls.(*bit.ly/1ezq93q*)
  - Accurate results for all the 20 benchmarks used by the McLab project.
- FreeMeLegal: An Open source license recommendation engine (COMP 762 Recommender systems, individual).(*bit.ly/1m030GV*)