Karthik Senthil

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EDUCATION

UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN
MS in Computer Science
Expected May 2018 | Urbana, IL
GPA: 4.0 / 4.0

NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA
B.Tech in Information Technology
Grad, May 2016 | Surathkal, India
GPA: 9.63 / 10.0

INTERESTS

- High Performance Computing
- Parallel Programming
- Performance Evaluation
- Programming Tools and Frameworks

COURSEWORK

GRADUATE

- Computer System Organization
- Parallel Programming
- Parallel Computer Architecture
- Operating Systems Design
- Scientific Visualization
- Parallel Numerical Algorithms

SKILLS

- **Programming**
  C/C++, Java, Ruby, Python
- **Softwares/Libraries**
  Charm++, MPI, OpenMP, HPCToolkit, OpenCL, Intel Pin DBI framework, Git

AWARDS AND HONORS

- NITK Institute Gold Medal (2016) for securing the highest GPA
- Best Paper Award in the Student Research Symposium at 22nd HiPC Conference (2015)
- Selected as Chairperson of Computer Society chapter of IEEE - NITK student branch
- NTSE(National Talent Search Examination) Fellowship

EXPERIENCE

PARALLEL PROGRAMMING LAB., UIUC Aug 2016 - Present
Graduate Research Assistant **Advisor: Prof. Laxmikant Kale**

- Work and conduct research on parallel programming applications and methodologies using Charm++/AMPI framework

LAWRENCE LIVERMORE NATIONAL LAB May - August 2017
Computation Student Intern **Advisor: Dr. Abhinav Bhatele**

- Implemented Quicksilver, a Monte Carlo Particle Transport Proxy Application in the Charm++ programming environment
- Redesigned the application for an asynchronous task based execution model
- Developed a more intuitive design for the scientific problem while maintaining the best performance on large scale machines

GOOGLE SUMMER OF CODE May - August 2016
Student Participant **Advisor: Prof. Sergio Antoy**

- Developed ruby_curry, a compiler implementation for Curry programming language built in Ruby
- The tool is an ideal playground for students and researchers to understand compilation techniques for functional logic programming languages
- Link : `https://github.com/karthiksenthil/ruby_curry`

UNIVERSITY OF GENEVA May - July 2015
Summer Student Intern **Advisor: Prof. Paul Albuquerque**

- Developed a simulation model to showcase the growth of a coral from a multi-scale massively parallel perspective
- The project was aimed at identifying and fine tuning parameters to produce an efficient simulation on the IBM Lemanicus Blue Gene/Q supercomputer

PUBLICATIONS

- V. Kale, H. Menon, **K. Senthil**. "Adaptive Loop Scheduling with Charm++ to Improve Performance of Scientific Applications", Research Poster at SC'17
- **Karthik Senthil**, Abhi Arun, Sowmya Kamath S, "A Content-based Visual Information Retrieval Approach for Automated Image Annotation", ICACNI 2016
- **Karthik Senthil**, Paul Albuquerque, Jonas Latt, "Multiscale multiphysics process on a HPC infrastructure : Application to coral growth process", Student Research Symposium at HiPC 2015

OTHER INTERESTS

Capture The Flag (CTF) contests, Web development