# Aditya Pakki

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| CONTACT INFORMATION | University of Minnesota<br>4-192 Keller Hall<br>200 Union Street, SE<br>Minneapolis, MN, 55455 | **Voice:** +1 (385) 216-5791<br>**E-mail:** adityapakki@gmail.com<br>**Skype:** aditya.pakki<br>**Web:** https://www-users.cs.umn.edu/~pakki001/ |

**RESEARCH INTERESTS**

I'm broadly interested in the area of Computer Systems, intersecting with Security, and High Performance Computing

**PROFESSIONAL PREPARATION**

- Ph.D. in Computer Science & Engineering, University of Minnesota, 08/17 - Present
  Advisor: Kangjie Lu
- M.S. in Computer Science, University of Utah, 08/14 - 08/16, Advisor: Martin Berzins
- B.Tech. in Information Technology, Jawaharlal Nehru Technological University, Hyderabad, India, 09/07 - 06/11, Advisor: P. Gopalakrishna

**HONORS AND AWARDS**

University of Utah, USA: Graduate Fellowship with tuition waiver, 2014-2015

Lassonde Institute: Winner(5 members) next generation Internet of Things concept design, 2015

JNTU, Hyderabad: graduated first class with distinction in I.T, 2011

JNTU, Hyderabad: Highest scoring undergraduate capstone project, 2011

**TECHNICAL REPORTS**

B. Peterson, N. Xiao, J. Holmen, S. Chaganti, A. Pakki, J. Schmidt, D. Sunderland, A. Humphrey, M. Berzins. Developing Uintahs Runtime System For Forthcoming Architectures, Subtitled Refereed paper presented at the RESPA 15 Workshop at SuperComputing 2015 Austin Texas, SCI Institute, 2015.

**RESEARCH EXPERIENCE**

**Los Alamos National Laboratory**  *Los Alamos, NM*

*Post Masters Summer Intern, Advisor: Dr. Jozsef Bakosi*  *May,2017 - Aug,2017*

As part of the Data Science at Scale summer school, I was tasked with performing data analysis of fluid dynamics equations solved using the Quinoa Computing Framework. To enable such an anaylsis, we integrated ROOT framework into QCF. Multiple questions of interest to computational physicsts were explored and answered.

**University of Utah**  *Salt Lake City, UT*

*Graduate Research Assistant, Advisor: Prof. Martin Berzins*  *May,2015 - Aug,2016*

Worked in Scientific Computing and Imaging(SCI) Institute on making simulations resilient to failure within Uintah Computational Framework and scalable at Exascale. To tackle component failures at core and node level, we implemented task re-execution, and data recovery by interpolation of replicated data respectively. Various higher order numerical interpolation techniques were tested and custom fault injection techniques and fault monitoring cases built.

*Independent Research, Advisor: Prof. Hari Sundar*  *Aug,2014 - Dec,2014*

Worked on parallelizing P3DFFT numerical library by converting corresponding C code into CUDA. Compared various problem sizes for scaling them on to a cluster of low power on chip Tegra TK1 GPUs. Studied various methods to perform a trade-off between power consumption and data allocation for compute efficiency.

**TEACHING EXPERIENCE**

**University of Minnesota**  Minneapolis, MN

*Graduate Teaching Assistant*  *Aug,2017 - present*

Fall'17: Discrete Structures (CSci 2011), Instructor: Carl Sturtivant

**University of Utah** Salt Lake City, UT
*Graduate Teaching Assistant* Aug,2014 - May,2015

Spring'15: Introduction to Scientific Computing (CS 3200), Instructor: Martin Berzins
Fall'14: Introduction to Object Oriented Programming(CS 1410), Instructor: Joseph Zachary
- Duties include holding biweekly office hours and leading lab sessions of up to 35 students.
- Helped with grading and solving the assignments, midterms and final examination scripts.

**Rishi M.S. Institute of Technology for Women** Hyderabad, India
*Adjunct Instructor* Dec,2011 - May,2013

Courses: Introduction to Java Programming, Operating Systems, and IT Workshop lab in Spring'13,
Fall'12, and Spring'12 semesters respectively.
- Instructed undergraduate freshmen and sophomore programming courses.
- Grading lab assignments and set midterm papers.

ACADEMIC **Mining supercomputer system logs to identify failure correlation** **Spring 2016**
PROJECTS *Joint work with Harshitha Parnandi, Jeff Philips(Instructor)* *CS:6140*
*Course: Data Mining*
**Performance Comparison of mini apps in CUDA & OpenACC** **Spring 2016**
*Joint work with Devi Ayyagari, Monomita Poddar, Mary Hall(Instructor)* *CS:6235*
*Course: Programming with Multi Core using GPUs*
**Implemented Sharded Paxos based Key-Value store** **Fall 2015**
*work based on MIT 6.824 with Ryan Stutsman(Instructor)* *CS:6963*
*Course: Distributed Systems*
**Parallelizing Radial Basis Function based nearest neighbor search** **Spring 2015**
*Joint work with Srivatsa Mudambi, Hari Sundar(Instructor)* *CS:6230*
*Course: High Performance Computing*

PROFESSIONAL **Goldman Sachs Inc.** Salt Lake City, UT
EXPERIENCE *Contractor Technology Specialist* Dec,2016 - May,2017
Worked on ensuring the production and QA servers and databases are healthy and running.

**Automatic Data Processing, LLC** Hyderabad, India
*Software Developer* Aug,2011 - Jun,2014
Performed database performance tuning, query optimization, and query migrations.

**Renaissance Software Technologies** Hyderabad, India
*Java Developer Intern* Mar,2010 - Aug,2010
Developed mobile game modules in J2ME for a startup company as part of undergrad requirements.

SERVICE
- Graduate Student Advisory Committee, School of Computing, University of Utah, (2015-16)
- Alternative student representative, Univeristy of Utah, (2015 - 2016)
- Class Representative, JNTU, Hyderabad, (2007 - 2011)
- Event Volunteer Coordinator, Automatic Data Processing Inc, (2011 - 2014)

SKILLS **Languages:** C++11, Python, C, Java, LaTeX, Bash scripting, SQL, MPI, OpenMP, CUDA.

**Tools & Environments:** Subversion, Git, Vim, DB/2, Eclipse, MATLAB, GNU Make, GDB, GCC, Visual Studio.

**Past Experience:** Go, JavaScript, XML.

**Natural Language:** Proficient in English(TOEFL iBT 110), Hindi, Telugu.