AMLAN CHATTERJEE

Department of Computer Science
California State University, Dominguez Hills
Carson, CA 90747

✉ achatterjee@csudh.edu
☎ (765) 418-1685
http://csc.csudh.edu/achatterjee

EDUCATION

- **Doctor of Philosophy**, Computer Science, December 2014.
  The University of Oklahoma, Norman, **GPA: 4.0/4.0**
  Dissertation: *Parallel Algorithms for Counting Problems on Graphs Using Graphics Processing Units.*
  Advisor: Dr. Sridhar Radhakrishnan
- **Master of Science**, Computer Science, June 2009.
  University at Buffalo, The State University of New York, **GPA: 3.76/4.0**
- **Bachelor of Technology**, Computer Science & Engineering, June 2007.
  West Bengal University of Technology, Kolkata, India, **GPA: 8.81/10.0**

PROFESSIONAL EXPERIENCE

- **Assistant Professor - Department of Computer Science**(Aug '15 - Present)
  California State University Dominguez Hills
- **Programmer Analyst - Wal-Mart Stores Inc.** (Jan '15 - Aug '15)
  Information Systems Division, 805 Moberly Lane, Bentonville, Arkansas 72712
  Managed eCommerce applications using Cassandra NoSQL database and Hadoop.
  Implemented Global Integrated Fulfillment (GIF) architectural design using Agile software development methodologies.

TEACHING EXPERIENCE

School of Computer Science, University of Oklahoma, Norman, August 2009 - August 2014

- **Instructor**: Introduction to Programming (Fall '13)
  Taught the course as primary instructor with an enrollment of 60 students.
  Designed the course, prepared lecture materials, conducted exams & help sessions and supervised a teaching assistant.
  Corresponded with students on "Desire2Learn", the Blackboard equivalent campus communication system at the University of Oklahoma.
- **Lab Instructor**: Introduction to Programming (Fall '10 - Fall '12, Spring '14)
  Supervised 3 labs with 135 students in total per week.
  Discussed assignments in the labs and explained concepts introduced during lectures.
  Assisted the primary instructor in creating projects and grading course material.
- **Graduate Teaching Assistant**:
  • **Operating Systems** (Fall '09, Spring '10)
  Teaching Assistant for the course with an enrollment of 40 students.
  Organized regular help sessions for students to review course material.
  Helped the instructor design and grade projects and assignments.
  Proctored examinations and helped record grades; kept students informed about upcoming assignment and project deadlines.
  • **Data Structures** (Spring '12, Spring '13)
  Assisted instructor in preparing presentations for lectures.
  Arranged review sessions as preparation for exams.

Helped in designing projects and grading of the same.
Maintained course website with updated information about lecture materials, assignments and examinations.

Center for Teaching Excellence, University of Oklahoma, Norman, August - December 2014

- **Graduate Teaching Assistant** (Fall '14)
  Teaching assistant for online section of Introduction to Programming course.
  Assisted with online help sessions; used chat-based support and screen sharing for debugging using *VSee*.
  Used *Notability* to grade and provide feedback on homework assignments, thereby completely eliminating printing and scanning overhead.

RESEARCH EXPERIENCE

- **Graduate Research Assistant** (Fall '09 - Fall '14)
  Primary focus on using Graphics Processing Units (GPUs) to solve combinatorially explosive and large graph problems.
  Programmed GPUs belonging to various architectures extensively using CUDA (Compute Unified Device Architecture).
  Collaborated with Geology & Geophysics researchers and other Computer Science students.
  Mentored 3 Masters students and 1 Doctoral student.

PUBLICATIONS

- M. Nelson, S. Radhakrishnan, **A. Chatterjee** and C. N. Sekharan, *On Compressing Massive Streaming Graphs with Quadtrees*, IEEE International Conference on Big Data, Workshop on Mining Big Data in Social Networks (MBD-SONET), 2015.
- **A. Chatterjee**, S. Radhakrishnan and C. N. Sekharan, *Connecting the dots: Triangle completion and related problems on large data sets using GPUs*, IEEE International Conference on Big Data, Workshop on High Performance Big Graph Data Management, Analysis, and Mining, pages 1-8, 2014.
- K. S. Hasan, **A. Chatterjee**, S. Radhakrishnan and J. K. Antonio, *Performance Prediction Model and Analysis for Compute-intensive Tasks on GPUs*, 11th IFIP International Conference on Network and Parallel Computing, Lecture Notes in Computer Science, Volume 8707, pages 612-617, 2014.
- **A. Chatterjee**, S. Radhakrishnan and J. K. Antonio, *On Analyzing Large Graphs Using GPUs*, IEEE 27th International Parallel and Distributed Processing Symposium Workshops & PhD Forum (IPDPSW), pages 751-760, 2013.
- **A. Chatterjee**, S. Radhakrishnan and J. K. Antonio, *Data Structures and Algorithms for Counting Problems on Graphs using GPU*, International Journal of Networking and Computing (IJNC), Volume 3, Number 2, pages 264–288, 2013.
- **A. Chatterjee**, S. Radhakrishnan and J. K. Antonio, *Counting Problems on Graphs: GPU Storage and Parallel Computing Techniques*, IEEE 26th International Parallel and Distributed Processing Symposium Workshops & PhD Forum (IPDPSW), pages 804-812, 2012.

POSTERS

- **A. Chatterjee**, S. Radhakrishnan and J. K. Antonio, *Efficient and Parallel Computations on Graphs Using GPUs*, Student Research & Performance Day, University of Oklahoma, 2012.

- **A. Chatterjee**, S. Radhakrishnan and J. K. Antonio, *Using GPUs for Graph Analysis*, College of Engineering, Graduate Programs Information Symposium, University of Oklahoma, 2012.
- V. Jayaram, K. D. Crain, G. R. Keller, **A. Chatterjee**, *A Fast Full Tensor Gravity Computation Algorithm for High Resolution 3D Geologic Interpretations*, Annual Fall AGU Meeting, 2011.

SKILLS

- **Programming Languages** – C, C++, Java, CUDA
- **Scripting Languages** – JavaScript, HTML, CSS, JSP, PHP
- **Tools** – Eclipse, MATLAB, LaTeX
- **Database** – Oracle, MS-Access
- **Operating System** – Windows, Linux

PROJECTS

- **Analyzing real-world graphs using GPUs:** Computed on graphs with over **1.5 million nodes** counting number of connected subgraphs, cliques and independent sets using efficient data structures. Achieved **7–8** times speedup on the GPU and obtained a further **8–10 %** increase in performance by using efficient techniques for global memory. Tools used: CUDA, C, Matlab, Nvidia profiler.
- **Elderly Care & Activity Monitoring System:** Detected daily activity and emergency situations for elderly people in home environment using wireless sensor nodes. Programmed sensors using NesC & TinyOS; used Java and Matlab for analysis of experimental data.
- **Navigation Aid for Visually Impaired – NAVI:** Worked in a team of **5 members**. Designed and implemented the core algorithms for potential collision detection between human movements and objects, and maintained documentation of the product. Followed all the phases of the **Software Development Life Cycle (SDLC)** in developing the product.
- **Question-Answering System:** Worked in a team of **4 members**. Built a user-interface using LISP & C for searching online data. Developed logic for extracting relevant information about the on-campus dining facilities of University at Buffalo.
- **Efficient computation on geological data:** Accelerated calculations **8–10** times by implementing a Fast Full Tensor Gravity Computation Algorithm for High Resolution using CUDA as compared to available Matlab libraries.
- **Academic Information System:** Computerized relevant details of an academic institution; developed logic and created web pages for different types of users to access information efficiently. Tools used: JavaScript, HTML, CSS and Oracle SQL.

SCHOLARSHIPS AND HONORS

- **Graduate Computer Science Scholarship**, University of Oklahoma, 2012–13
- **Computer Science Advisory Board Scholarship**, School of Computer Science, University of Oklahoma, Norman, 2012
- **Phillips Petroleum Scholarship**, University of Oklahoma, Norman, 2010–11
- **Ranked 1st** among 68 students in the Department during Undergraduate studies

ACADEMIC SERVICE

- **Advisory Council on Research Member**, College of Natural & Behavioral Sciences, California State University, Dominguez Hills, 2015
- **Search Committee Member**, Associate Vice President for Student Success Search Committee, California State University, Dominguez Hills, 2015
- **Accreditation Board for Engineering and Technology (ABET) Committee Member**, Department of Computer Science, California State University, Dominguez Hills, 2015
- **Curriculum Committee Member**, Department of Computer Science, California State University, Dominguez Hills, 2015–16
- **Research Committee Member**, Department of Computer Science, California State University, Dominguez Hills, 2015–16
- **Faculty Advisor**, IEEE Computer Society Club, ACM Student Chapter, Cyber Security Club, Computing Alliance of Hispanic Serving Institutions (CAHSI) Club; California State University, Dominguez Hills, 2015–16
- **President, Computer Science Graduate Student Association (CSGSA)**, University of Oklahoma, Norman, 2010–11
- **Graduate College Academic Appeal or Misconduct Panels** University of Oklahoma, Norman, 2010–11
  Nominated by the School of Computer Science to serve as potential member of the panel.
- **Class Representative**, Computer Science & Engineering Department, West Bengal University of Technology, India, 2004–07
- **Placement Committee Representative**, Computer Science & Engineering Department, West Bengal University of Technology, India, 2006–07

AFFILIATIONS

- **IEEE**, Member of the Institute of Electrical and Electronics Engineers
- **IEEE Computer Society Membership**, Member
- **IEEE Communications Society**, Member
- **IEEE Young Professionals**, Member
- **ACM**, Member of the Association for Computing Machinery
- **IAENG** Member, International Association of Engineers

PROFESSIONAL ACTIVITIES

- **Advisory/Editorial Board**, International Journal of Innovative Research in Computer Science & Technology (IJIRCST)
- **Reviewer**, International Journal of Networking and Computing (IJNC)

LANGUAGES

- English (fluent)
- Bengali (native)
- Hindi (native)