Amir Nodehi

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EDUCATION:

- Ph.D. in Computer Science, University of California, Riverside, **GPA: 4 out of 4** 2016 – Present
- M.S. in Computer Science, Sharif University of Technology 2011 – 2014
- B.S. in Computer Science, University of Mazandaran 2005 – 2009

EXPERIENCE:

- **Research Intern, Microsoft Research**, Redmond, Washington. Summer 2020
  Assisted with the development of CoCoNET, a DSL embedded in C++, to schedule distributed machine learning computations, and a compiler and runtime to execute them.
- Graduate Student Researcher / Teaching Assistant, University of California, Riverside. 2016 – Present

RESEARCH INTERESTS:

- High Performance Computing, Parallel & Distributed Computing, GPU computing
- The intersection of systems and AI / Deep Learning / Reinforcement Learning
- Graph Processing

PUBLICATIONS:

- Scalable FSM Parallelization via Path Fusion and Higher-Order Speculation.
  Junqiao Qiu, Xiaofan Sun, **Amir Nodehi**, Zhijia Zhao. **ASPLOS 2021**
- Subway: Minimizing Data Transfer during Out-of-GPU-Memory Graph Processing.
  Amir Nodehi, Zhijia Zhao, and Rajiv Gupta. **EuroSys 2020**
- Reliability Analysis for Unreliable FSM Computations.
  Amir Nodehi, Junqiao Qiu, Zhijia Zhao, and Sriram Krishnamoorthy. **TACO 2019**
- Tigr: Transforming Irregular Graphs for GPU-Friendly Graph Processing.
  Amir Nodehi, Junqiao Qiu, and Zhijia Zhao. **ASPLOS 2018**

RESEARCH EXPERIENCE:

- Created Subway, a highly cost-effective out-of-GPU memory graph processing framework. (https://github.com/AutomataLab/Subway).
- Created Tigr, a CUDA-based graph processing framework (https://github.com/amirnodehi/Tigr). Tigr is 2x faster than the state-of-the-art graph processing frameworks.
- Master Thesis: Clustering and Embedding Graphs into Trees. Designed an efficient approximation graph clustering algorithm.
- Bachelor Thesis: Parallelizing Minimax Alpha-Beta Pruning algorithm and developing a chess engine.

PROFESSIONAL COMPUTER SKILLS:

- **C**, **C++**, Java, MATLAB, C# | **CUDA, NCCL** | PThreads, Cilk, OpenMP| **Python**, **PyTorch**, TensorFlow, Keras | MPI, Hadoop, Spark | Android/iOS Software Development, Flutter, Dart | SQL, GIT

Teaching:

- CS 150 - The Theory of Automata and Formal Languages, UCR, Spring 2021
- CS 010 - Introduction to Computer Science for Science, Mathematics, and Engineering II, UCR, Winter 2021
- CS 179 - Project in Computer Science, UCR, Winter 2018
- CS 180 - Introduction to Software Engineering, UCR, Fall 2017

HONORS & AWARDS:

- Won the Dean's Distinguished Fellowship Award from University of California, Riverside 2019 – 2020
- Won the Graduate Assistance in Areas of National Need (GAANN) Fellowship Award 2016 – 2019
- Graduate Fellowship, Sharif University of Technology 2011 – 2014

Journal/Conference Reviewer | Artifact Evaluation Committee:

- ASPLOS'21, Micro'20, Taco'20, PPoPP'20, NPC'19, ISC'19, HiPC'19, TPDS'18, ICS'18, HiPC'18, TPDS'17, CF'17