Dhruv Devulapalli

Website: dhruvdevu.github.io
Email: ddhruv@umd.edu

Education

University of Maryland   College Park, MD
Ph.D. in Physics, NSF Graduate Research Fellowship, GPA: 3.74/4.00   August 2019–Current

University of California   Berkeley, CA
B.A in Physics, B.A in Computer Science, GPA: 3.95/4.00   August 2015–May 2019

- High Distinction in General Scholarship, Phi Beta Kappa, Upsilon Pi Epsilon (CS Honor Society)

Research Experience

Joint Center for Quantum Information and Computer Science (QuICS), UMCP   College Park, MD
Graduate Research Assistant   August 2019–Current

- Studying multiparticle quantum random walks
- Investigating use of local operations and classical communication (LOCC) on quantum architectures with restricted qubit connectivity.

Whaley Group, UC Berkeley   Berkeley, CA
Research Assistant   January 2018–May 2019

- Studied Tensor Networks and implementing a Quantum Machine Learning algorithm using Tensor Networks on a near-term quantum device (Rigetti)

ATLAS, Lawrence Berkeley National Lab   Berkeley, CA
Research Assistant   August 2016–January 2018

- Simulating and profiling a new design for inner pixel detectors at the Large Hadron Collider ATLAS experiment.
- Part of search for dark matter signatures in boosted Higgs decays from proton-proton collisions. Calibrating and profiling new Higgs tagging frameworks.

Publications

[1] A. Y. Guo, A. Deshpande, S.-K. Chu, Z. Eldredge, P. Bienias, **D. Devulapalli**, Y. Su, A. M. Childs, and A. V. Gorshkov, *Implementing a fast unbounded quantum fanout gate using power-law interactions*, 2020. arXiv: 2007.00662 `[quant-ph]`.

Teaching Experience

Intro to Quantum Computing DeCal, UC Berkeley
Instructor and Course Facilitator   Fall 2018

- Created and taught Intro to Quantum Computing course to 27 undergraduates as a DeCal (Student run course)
- Designed syllabus, midterm, project, practice problems.
- Course details - qcb.berkeley.edu/decal.html

Industry Experience

Amazon (AWS)   Seattle, WA
Software Engineering Intern   May 2018–August 2018

- Benchmarking and testing face recognition models – detection, landmarks, alignment, face embedding, and recognition.
- Created SDK for developing applications using different computer vision models using python, gstreamer, opencv
- Investigating further optimization for Computer Vision Models using tools such as TensorRT

Sonos   Boston, MA
Software Engineering Intern   June 2017–August 2017

- Full stack development for applications across Android, iOS, Mac and Windows.
- Implementing new features within Sonos APIs and applications to cater to user and partner needs.

Outreach and Service

Quantum Computing at Berkeley   Berkeley, CA
Founder and President   August 2018–May 2019

- Created club for students interested in Quantum Computing to connect students, industry, and academia in the field.
- Registering new club, recruiting members, planning activities, projects, and experiments, meeting with professors and research groups, organizing industry events and lab tours
- Set up a mentorship program to involve more undergraduates from a wide range of backgrounds in quantum computing research.
- Teaching Intro to Quantum Computing DeCal (See teaching experience)

Skills

- **Programming:** C, C++, Python, Java, Scheme/LISP, TensorFlow, iTensor, Android, Root, Objective-C, SQL, JavaScript, PHP.
- **Languages:** English (Native Proficiency), Hindi (Intermediate), Telugu (Intermediate), French (Basic)

Scholarships and Awards

- NSF Graduate Research Fellowship   2019–Current
- Phi Beta Kappa (Academic Honors in Liberal Arts and Sciences)   2019
- Dean's List, UC Berkeley   Fall 15, Spring 16, Spring 17, Spring 18
- Upsilon Pi Epsilon (CS Honor Society for top 1/3rd Computer Science Majors)   2016–2019

Relevant Coursework:

- Graduate: *Quantum Information Processing, Advanced Algorithms, Quantum Mechanics I/II, Modern Discrete Probability, Quantum Field Theory, Modern Condensed Matter I/II*
- Undergraduate/Graduate: *Quantum Computing, Algorithms, Machine Learning, Artificial Intelligence, Deep Learning*