Abhishek Dilip Yenpure
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Ph.D. Candidate
Computer and Information Science
University of Oregon

Currently looking for fulltime opportunities

Dated: January 2022

Work Interest

Scientific and Information Visualization, High Performance Computing, Distributed Systems

Education

Ph.D. (Computer and Information Science)
University of Oregon (*2018 - Exp. 2022*)

Master of Science (Computer and Information Science)
University of Oregon (*2016 - 2018*)

GPA: 3.99

Bachelor of Engineering (Information Technology)
Sinhagad Institutes, University of Pune (*2009 - 2013*)

72.97 % (GPA: 3.95/4.00)
First Class with Distinction

Experience and Technical Projects

Graduate Research Fellow,
CDUX Group, University of Oregon

September 2016 - Present

- Involved in development of the performance portable parallel scientific visualization library **VTK-m.**
- Involved in the performance study of various visualization and scientific algorithms to optimize them for execution on modern supercomputers by leveraging many-core parallel hardware. (CPUs, Nvidia GPUs).

Summer Research Intern,
National Center for Atmospheric Research (NCAR)

June 2020 - September 2020

- Adding parallel processing capabilities for particle advection in VAPOR.
- Identifying existing performance bottlenecks in data access capabilities in VAPOR.
- Investigating advanced flow visualization algorithms for domain scientists: FTLE, Q-Criterion.

Summer Research Intern,
Sandia National Laboratories

June 2019 - September 2019
June 2018 - September 2018

- Implemented a high performance, data parallel, performance portable solutions to Scientific Visualization problems.
  - Point Merging : Merging close-by points in space to improve mesh quality, reduce storage for spatial data.
  - FTLE : Implemented efficient, parallel Finite Time Lyapunov Components (FTLE) to be used in various flow analysis.
- Performance profiling for VTK-m and comparing results against a widely used scientific visualization library VTK.

Summer Research Intern,
Oak Ridge National Laboratory

June 2017 - September 2017

- Implementation of advanced functionality to the particle advection module of the VTK-m library.
  - Temporal advection and better ODE solvers
- Implemented and tested various approaches of generating particle trajectories on a large scale for a performance study.

Senior Software Engineer,
eQ Technologic (India) Pvt Ltd.

April 2016 - August 2016

- Assumed greater responsibilities to my tasks as a Software Engineer for handling various issues and prototyping using the agile SDL model.
- Responsible to lead a team of fresh software engineers to contribute code to the eQube product suite for the PTC Windchill Plugin, and PTC Creo CAD migration to Siemens Teamcenter NX.

Senior Engineer,
eQ Technologic (India) Pvt Ltd.

July 2013 - March 2016

- Acquired domain knowledge of the PLM domain and Business Intelligence by contributing code to the flagship products: eQube BI (Business Intelligence) and eQube MI (Migration/Integration).
- Responsible for development of Adapter and Plugins (an ETL tool framework) for seamless integration with other enterprise applications (Siemens Teamcenter, PTC Windchill, Mentor Graphics DMS etc.
- Worked for customizing enterprise business applications like Siemens' Teamcenter and PTC's Windchill.

Technical Skills

- Languages: C and C++, Java, Python
- Platforms: Linux, Unix (IBM AIX/ Sun Solaris), and Windows
- Experienced with parallel programming frameworks and libraries like TBB, MPI, OpenMP, CUDA
- Experienced with performance profiling: Intel VTune, Nvidia nvprof, Oracle VisualVM, PAPI, Variorum, LIKWID
- Worked extensively with SQL, PL/SQL using Oracle RDBs and MySQL. Familiar with NoSQL DBs.
- Experience with designing and implementing complex enterprise applications

Honors and Awards

- Awarded with the **J. Donald Hubbard Family Scholarship** from the **University of Oregon** *(2020-2021)*
- Awarded with the **Sushil Jajodia Endowed Scholarship** from the **University of Oregon** (*2017-2018, 2019-2020*)
- Awarded with the **Jhamandas Watumull Endowed Scholarship** from the **University of Oregon** (*2016-2017*)
- Awarded **Rank Certificate** from the **University of Pune**: *2011, 2013*

Publications

- D Pugmire, **A Yenpure**, M Kim, J Kress, R Maynard, H Childs, B Hentschel, "Performance-Portable Particle Advection with VTK-m," Eurographics Symposium on Parallel Graphics and Visualization, 2018

- **A Yenpure**, H Childs, K Moreland, "Efficient Point Merging Using Data Parallel Techniques," Eurographics Symposium on Parallel Graphics and Visualization, 2019

- R Binyahib, D Pugmire, **A Yenpure**, H Childs, "Parallel Particle Advection Bake-Off for Scientific Visualization Workloads," IEEE International Conference on Cluster Computing (CLUSTER), 2020

- S Sane, **A Yenpure**, R Bujack, M Larsen, K Moreland, C Garth, C Johnson, H Childs, "Scalable In Situ Computation of Lagrangian Representations via Local Flow Maps," Eurographics Symposium on Parallel Graphics and Visualization, 2021

- K Moreland, R Maynard, D Pugmire, **A Yenpure**, A Vacanti, M Larsen, H Childs, "Minimizing development costs for efficient many-core visualization using MCD3," Parallel Computing 108 (2021): 102834

- **A Yenpure**, S Sane, R Binyahib, D Pugmire, C Garth, H Childs, "A Guide to Particle Advection Performance." In Submission, IEEE Transactions on Visualization and Computer Graphics (TVCG)

- **A Yenpure**, , D Pugmire, , H Childs, "Particle Advection Speedups from GPU and CPU Parallelism." In Submission, Eurographics Symposium on Parallel Graphics and Visualization, 2019

Service

- Early Career Program Committee Member, In Situ Analysis and Visualization (2021)
- Student Volunteer at Supercomputing 2020 (Remote)
- Early Career Program Committee Member, In Situ Analysis and Visualization (2020)
- External Reviewer (for a chapter), In Situ Visualization for Computational Science (Textbook by Springer) 2020
- Student Volunteer, Supercomputing 2019 (Denver, CO)
- Early Career Program Committee Member, In Situ Analysis and Visualization (2019)