Pavan Poudel

Summary: *Ph.D. candidate with 4+ years of research experience in Parallel and Distributed Computing (Transactional Memory, Persistent Memory, Automation and Robotic Algorithms); designing better Transactional Memory models for multi-core and distributed systems, providing time efficient algorithms for robots gathering and scattering problems in collaboration with research scientists from different universities (KSU, UCF etc.);*

EDUCATION

Ph.D., Computer Science, Kent State University, USA. May 2021 (Expected)
GPA: 4.0

B.E., Computer Engineering, Tribhuvan University, Nepal. Nov 2013
GPA: ~3.9

TECHNICAL SKILLS

Programming Languages: Java, Python, C, C++, C#

Parallel Programming Models: CUDA, OpenMP, MPI

Data Mining and Tools: Pandas, Numpy, SciPy, scikit-learn, MatplotLib, Tableau

Web Technologies: HTML, CSS, JavaScript, Ajax/jQuery, Wordpress, WAMP/XAMPP

Databases: MySQL, SQLite, Oracle, MongoDB

Libraries and APIs: Google APIs, OpenCV, Tesseract OCR

Version Control: Git, SVN

Tools and Services: IntelliJ IDEA, NetBeans, Visual Studio, Jupyter Notebook, PyCharm, Packet Tracer, Wireshark, AWS, Adobe Photoshop, LATEX

PROFESSIONAL EXPERIENCES

Kent State University, Kent, OH, USA. Aug 2016 – Present
Graduate Research Assistant

- Researched on Transactional Memory, Persistent Memory, Algorithms, and Robotics.
- Designed better transactional memory models for multi-core and distributed systems.
- Developed a simulation software in C++ and Java for executing transactions in a distributed environment.
- Designed a distributed directory protocol in Java for running transactions in a predefined order.
- Designed time-optimal algorithms for robots gathering, scattering, and complete visibility problems.
- Implemented and tested the algorithms using C++, Java, or Python.

Omni i-Tech Solutions, Kathmandu, Nepal. Apr 2014 – Jul 2016
Software Developer

- Developed a network application in Java using MySQL database for engineering institutions to digitize student's records and automate tasks of the exam section.
- Developed a desktop application in C# for analyzing rainfall data of several years.
- Documented and created support manuals for the software.
- Provided training and support for the installation and operation of the software to the clients.

Kantipur Engineering College, Lalitpur, Nepal. Nov 2013 – Jul 2016
Lecturer

- Taught and conducted laboratories for the following undergraduate courses: *C/C++ Programming, Computer Networks, Database Management System, Data Structures & Algorithms*.
- Supervised students in their course-works and thesis projects.
- Helped to coordinate events like conferences, seminars, software exhibitions, sports-weeks etc.

KEY PROJECTS

Adaptive Versioning in TM

- Designed a new versioning approach combining lazy and eager versioning in transactional memory.
- Implemented using STM libraries in C++ for a shared memory multi-core system.

GraphTM

- Designed and developed a simulation framework for transactional memory in a distributed system.
- Implemented in Java under line, clique, grid, cluster, and star topologies.
- Experimented on the TM benchmarks written in C++.

Digital Exam Section (DES)

- Designed and developed a software in Java using MySQL database to digitize the student's academic records and automate tasks in the exam section of an engineering institution in Nepal.
- Used distributed client server architecture for the database as well as the operation of the software.
- Hardware interfaced with document scanner and used Tesseract OCR API for extracting the texts.

Drought Analyzer

- Developed an application in C#.NET to analyze the rainfall data of several years for the Eastern region of Nepal and calculate drought indices.
- Used ArcGIS API for extracting the rainfall data from .tiff images.

Save the Princess

- Developed a web application (game) using HTML, CSS, JavaScript, and Python and hosted in pythonanywhere using bottlepy framework.

AWARDS AND HONORS

The John Sechrist Scholarship for Computer Science, 2019-2020, Kent State University.

Hine Scholarship in Computer Science, 2018-2019, Kent State University.

Graduate Student Senate Award, 2017-2018, Kent State University.

Best Presentation Award, Graduate Research Symposium, Apr 4-5, 2019, Kent State University.
(Title of the presentation: *Adaptive Versioning in Transactional Memories.*)

Best Final Year Project Award, Dec 2013, Tribhuvan University. (Project: *Yellow Café*)

Best Project Award, Feb 2013, Technical Exhibition. (Project: *Software Based Firewall System*)

ACTIVITIES

Volunteer, Greater Cleveland Food Bank, Cleveland, OH, USA	Oct 2019
Event Coordinator, Nepalese Student Association at Kent State University	Aug 2017 – Aug 2018
Member – Local Organizing Committee, SKIMA 2015 Conference, Nepal	2015
Coordinator, Computer Club, Tribhuvan University, Nepal	May – Oct 2013

SELECTED PUBLICATIONS

[1] **Pavan Poudel,** Shishir Rai, Gokarna Sharma, "*Processing Distributed Transactions in a Predefined Order*", In: ICDCN. pp. 1-10. ACM (2021)

[2] **Pavan Poudel** and Gokarna Sharma, "*GraphTM: An Efficient Framework for Processing Transactions in a Distributed Environment",* In: ICDCN. pp. 11:1-11:10. ACM (2020)

[3] **Pavan Poudel** and Gokarna Sharma, "*Adaptive Versioning in Transactional Memories*", In: SSS. LNCS 11914. pp. 277-295 (2019)

[4] Gokarna Sharma, **Pavan Poudel**, Ayan Dutta, Vala Zeinali, Tala Talaei Khoei, Jong-Hoon Kim, "*A 2-Approximation Algorithm for the Online Tethered Coverage Problem",* In: RSS. pp. 9 pages (2019)

[5] **Pavan Poudel** and Gokarna Sharma, "*Time-Optimal Uniform Scattering in a Grid",* In: ICDCN. pp. 228-237. ACM (2019)

[6] **Pavan Poudel** and Gokarna Sharma, "*An Adaptive Logging Framework for Persistent Memories*", In: SSS. LNCS 11201. pp. 32-49 (2018)

[7] Aisha Aljohani, **Pavan Poudel**, Gokarna Sharma, "*Complete Visitability for Autonomous Robots on Graphs",* In: IPDPS. pp. 733-742. IEEE (2018))