Pradeep Kumar

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Education

The George Washington University, Washington, DC, USA 01/2014 - 08/2019
PhD in Computer Engineering

Indian Institute of Technology, Dhanbad, India 08/2003 - 05/2007
Bachelor of Technology in Electronics Engineering

Professional Experience

Assistant Professor, Department of Computer Science 08/2019 - Present
William & Mary, Williamsburg, VA

Research Assistant, Department of Electrical and Computer Engineering 06/2016 - 07/2019
The George Washington University, Washington DC

Teaching Assistant, Department of Electrical and Computer Engineering 08/2014 - 05/2016
The George Washington University, Washington DC

Intern, Storage Systems Research 05/2018 - 08/2018
IBM Almaden Research, San Jose, CA

- Scheduler Design to improve support for Stateful Containers in the Cloud environment

File System & Kernel Developer 10/2009 - 12/2013
NetApp Inc, Bangalore, India

- Caching Policy Design and Implementation of Flash Pool (a hybrid RAID groups of HDDs and SSDs)
- API design and implementation for Storage Volume Metadata Mirroring and Recovery
- Storage Systems Management and API/CLI Design and Implementation

Software Developer 07/2007 - 09/2009
Huawei Technologies, India and China

- Compiler and Run-time Library for TTCN/ASN Programming Language
- Lexical and Syntactic Analyzer Design and Implementation for TTCN Programming Language

Hardware Design Intern 05/2006 - 07/2006
Defense Research & Development Organization (DRDO), Bangalore India

- Design and Implementation of Radar Target Simulator using Digital Pulse Compression technique

Research Publications

[ACM TOS'20] Pradeep Kumar, Howie Huang. "GraphOne: A Data Store for Real-time Analytics on Evolving Graphs". ACM Transactions on Storage, Volume 15, Number 4, pp 1-40. January 2020.

[USENIX FAST'19] Pradeep Kumar, Howie Huang. "GraphOne: A Data Store for Real-time Analytics on Evolving Graphs". In Proceedings of the 17th USENIX Conference on File and Storage Technologies, 2019

[USENIX ATC'17] Pradeep Kumar, H. Howie Huang. "Falcon: Scaling IO Performance in Multi-SSD Volumes". In Proceedings of the 2017 USENIX Annual Technical Conference.

[Big Data Congress'17] Pradeep Kumar, H. Howie Huang. "SafeNVM: A Non-Volatile Memory Store with Thread-Level Page Protection". In Proceedings of the 6th IEEE International Congress on Big Data, 2017.

[IEEE HPEC'17] Yang Hu, Pradeep Kumar, Guy Swope (Raytheon), H. Howie Huang "TriX: Triangle Counting at Extreme Scale". In Proceedings of the 2017 IEEE High Performance Extreme Computing Conference. *Finalist, IEEE/Amazon/DARPA Graph Challenge, 2017.*

[SC'16] Pradeep Kumar, Howie Huang. "G-Store: High-Performance Graph Store for Trillion-Edge Processing". In Proceedings of the 29th International Conference for High Performance Computing, Networking, Storage and Analysis, 2016 (Acceptance Rate: 18.3% (81/446).

Teaching Experience

- CSCI 780-02 Big Data, Fall 2020
- CSCI 708-01 Methods in Graph Completion, Fall 2020
- CSCI 444-01 Operating Systems, Spring 2020
- CSCI 780-02 Big Data Systems, Fall 2019

Community Engagement and Services

- NSF CSR Panelist, Small Proposals, 2020
- Workshop and Tutorial Co-Chair, IEEE ACSOS'20, Washington DC
- PC Member: ICDCS'21, Usenix HotEdge'20, IEEE TPDS Special Section on Parallel and Distributed Computing Techniques for AI, ML, and DL, 2020
- Reviewer: IEEE TPDS, IEEE TKDE, IEEE TC
- External PC Member: Usenix FAST'20, OOPSLA'20
- Attended NSF Data Storage Research 2025 Workshop held at IBM Almaden Research, 2018
- Volunteer: NSF Aspiring CSR PIs Workshop, 2018
- Figured in *Best Reviewers* list based on peer feedback system, Shadow PC Eurosys'18
- Sub-reviewer in ICDCS'18, NAS'18, BDCAT'18
- Student Volunteer, ACM/IEEE SC'16

Awards and Recognitions

- Summer Research Grant, W&M, 2020
- *Best Dissertation Award*, Electrical and Computer Engineering, George Washington University, 2020
- *Travel Grant* from Usenix FAST'19, FAST'17
- *Finalist*, IEEE/Amazon/DARPA Graph Challenge, 2017
- *Travel Grant* from the George Washington University for USENIX ATC'17
- *Philip/Temofel Sprawcew Endowment*, the George Washington University, 2016-2017
- NetApp *New Invention Award* for submitting two New Invention Reports, 2011-2012
- Huawei *Best New Comer Award*, 2008
- Huawei *Spot Award for Best Team Player*, 2008
- *Membership Director* (Founding), IEEE Student Chapter, IIT Dhanbad, 2005-2006
- Achieved Top 2% standing in IIT Joint Entrance Examination, India, 2003