PRAKASH CHANDRA CHHIPA

Doctoral Researcher at Luleå University of Technology, Sweden

Email: prakash.chandra.chhipa@ltu.se
Phone: +46-765923073
Website: https://prakashchhipa.github.io/
LinkedIn: https://www.linkedin.com/in/prakash-chandra-chhipa/
GitHub: https://github.com/prakashchhipa
Google Scholar: https://scholar.google.com/citations?user=AF-zbRoAAAAJ

Professional Summary and Goal

Doctoral researcher in computer vision (defending soon) with 8 years of industrial machine learning R&D experience with three AI products commercialized and multiple granted patents. Seeking a leadership role where academic research and industrial R&D exposure can be utilized effectively in capacity of leader and prominent individual contributor.

Current Position and Research Highlights

ML Group, Luleå University of Technology | Ph.D. candidate (2020 - now)

- Research: Self-supervised Learning, Representation Learning, Robustness, Multi-modality
- Advisor: Prof. Marcus Liwicki, Chaired Professor
- Published several publications in prestigious venues (ECCV, WACV, ACCV, ICIP, ++)
- Visiting researcher at Center for Research in Computer Vision (CRCV), University of Central Florida under renowned Prof. Mubarak Shah, UCF Trustee Chair Professor, Director, CRCV, UCF, USA
- Reviewer for CVPR 2024, NeurIPS 2024, IJCNN 2024 and session chair at IJCNN2023 and ICDAR 2021
- Defended licentiate thesis (half-way milestone to Ph.D.) in March 2023. Link
- Accepted to prestigious ML school at University of Cambridge UK, multiple invited talks including EMBL European Bioinformatics Institute Cambridge, UK and MIRAI Kyushu University, Japan and awarded three grants

Industrial R&D Experience

Arkray Research & Development (2018 - 2020) | Lead Data Scientist

- Research & development of computer vision based urinalysis system Aution Eye AI Urinalysis - 4510, commercialized in 2019.
- Built and led a team of 6 researcher and data scientist.
- Inventor for two patents related to urinalysis and biomarker discovery.

Samsung Research Institute (2012 – 2018) | Staff Engineer – AI & Data Intelligence Group

- Contributed long-term for multiple visual media domain computer vision and reinforcement learning based R&D products led to commercialization to Samsung Ads and Samsung ACR

- Led the team of 13 engineers and data scientist on multiple ideations to product development achieving through Live TV program & channels identification, Recorded TV program recognition, On-screen object & celebrity detection, & music recognition at large scale release.
- Three internationally granted patents with dozens of patent applications, including high influential IP on human viewing activity prediction in AR with citations from Google, Meta, Apple, Boeing, Sony, Lenovo, and others.
- Awarded three work promotions in six-year tenure with Innovator of the Year award.

HCL Technologies (2010 – 2012) | Associate Consultant

- Developed SOA-enabled platform for T-Mobile.

Education

Luleå University of Technology, Sweden

- Doctor of Philosophy – Machine Learning (2020 - Present)
- Licentiate Degree – Machine Learning (2020 - 2023)

University of Rajasthan, India

- Master's Degree - Computer Science (2006-2009)
- Bachelor's Degree – Mathematics & Physics (2003-2006)

Publications (refer scholar for complete list)

- *Möbius Transform for Mitigating Perspective Distortions in Representation Learning*. European Conference on Computer Vision (**ECCV 2024**, Milan, Italy).
- *LCM: Log Conformal Maps for Robust Representation Learning to Mitigate Perspective Distortion.* Asian Conference on Computer Vision (**ACCV 2024**, Vietnam).
- *Magnification Prior: A Self-Supervised Method for Learning Representations on Breast Cancer Histopathological Images.* CVF Winter Conference on Applications of Computer Vision, (**WACV 2023**, Hawaii, USA).
- *Functional Knowledge Transfer with Self-supervised Representation Learning.* International Conference on Image Processing (**ICIP 2023**, KL, Malaysia).
- *Can Self-Supervised Representation Learning Methods Withstand Distribution Shifts and Corruptions?* CVF International Conference on Computer Vision Workshops, (**ICCV Workshops 2023**, Paris, France).
- *Open-Vocabulary Object Detectors: Robustness Challenges under Distribution Shifts*. European Conference on Computer Vision Workshops, (**ECCV Workshops 2024**, Milan, Italy).
- *Domain Adaptable Self-Supervised Representation Learning on Remote Sensing Satellite Imagery*. International Joint Conference on Neural Networks (**IJCNN 2023**, Gold Coast, Australia).
- *Depth Contrast: Self-Supervised pretraining on 3DPM Images for Mining Material Classification.* European Conference on Computer Vision Workshops, (**ECCV Workshops 2022**, Tel Aviv, Israel).

Patents (3 granted and others in IP applications)

- Image Generation Learning Apparatus, Method, And Program JP2019-152860.
- Method and system for urine components examination on microscopic images using AI, JP2020-252660.
- A System & A Method of Forecasting Actions of Viewers Viewing Advertisements, 6735/CHE/2015
- System and Method for interactive visual media generation using generative AI models, IN201811030218
- Method and apparatus for adjusting augmented reality content, US11024263B2, WO2019143117, EP3676656
- A System & Method for Targeted content delivery in blockchain network, IN201811039652
- Display device for transmitting advertisement content and control method thereof, KR1020200044692
- Method and apparatus for managing a wide view content in a virtual reality environment, US10706632B2, WO2019098609, EP3639523
- Digital Content Rendering, IN201711040660
- Methods for providing augmented reality (AR) content, and devices thereof, IN201811002097
- Display device for transmitting advertisement content and method for controlling same, WO2020080874, US20220005072

Skills

Programming: Python, Java, C++, PyTorch, TensorFlow
Machine Learning: Vision architectures, Optimization, Large-scale model training
Mathematics: Probability Theory, Calculus, Complex and real analysis
Research: Literature survey, Problem identification, Critical analysis, and method proposal
Leadership: Team building, KPI driven leadership, collaborator engagements

Additional Course-works

Deep Learning Specialization: deeplearning.ai (2017-2018)
Data Science Specialization: Coursera – John Hopkins University (2014)
Machine Learning: Coursera.org- Stanford University (July 2017)

Awards and Recognitions

Outstanding Performance Awards – Samsung R&D (2015, 2018)
IP Creator of the Year – Samsung R&D (2017)
Patent Generation Awards - 2016, 2017, Q1 2018, and Q2 2018

References – Ph.D. advisor: Prof Marcus Liwicki and Manager: Dr. Björn Backe