Kaushik S

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Education

IIITDM Kancheepuram — Chennai
Dual Degree (B.Tech+M.Tech) Computer Engineering *GPA: 8.83/10* — July 2014 - July 2019

Maharishi Vidya Mandir — Chennai
CBSE Grade 12 : 475/500 (100/100 in Mathematics) — April 2014

Selected Publications

- Balamurali Murugesan, Sricharan Vijayarangan, Kaushik Sarveswaran, Keerthi Ram, Mohanasankar Sivaprakasam. KD-MRI: A knowledge distillation framework for image reconstruction and image restoration in MRI workflow. Medical Imaging for Deep Learning (MIDL 2020). https://2020.midl.io/papers/murugesan20.html
- Murugesan B., Vijaya Raghavan S., Sarveswaran K., Ram K., Sivaprakasam M. (2019) Recon-GLGAN: A Global-Local Context Based Generative Adversarial Network for MRI Reconstruction. In: Knoll F., Maier A., Rueckert D. (eds) Machine Learning for Medical Image Reconstruction. MLMIR 2019.
- Balamurali M*., Kaushik S*., SM Shankaranarayana, K Ram, M Sivaprakasam: Psi-Net: Shape and boundary aware joint multi-task deep network for medical image segmentation. In: 2019 IEEE 41st Engineering in Medicine and Biology Conference (EMBC 2019)
- Balamurali Murugesan, Sakthivel Selvaraj, Kaushik Sarveswaran, Keerthi Ram, Jayaraj Joseph, Mohanasankar Sivaprakasam, "Deep detection and classification of mitotic figures," Proc. SPIE 10956, Medical Imaging 2019: Digital Pathology, 109560T (18 March 2019)

Experience

Comcast India Engineering Center — Chennai
Engineer 3, Machine Learning — September 2024 - Present

- Conducting Machine Learning Research in AIOps. Exploring and evaluating the application of LLMs and Time series foundation models to enhance anomaly detection capabilities.
- Building agentic workflows for end-to-end AIOps automation, encompassing tasks such as anomaly detection, root cause analysis, and mitigation.
- Conducting research to improve OpenStack infrastructure observability, with a primary objective of reducing Mean Time To Detect (MTTD) and Mean Time To Resolve (MTTR).
- Developing and validating a novel approach for non-activity anomaly detection in senior citizen activity data, aiming to minimize false positive notifications sent to caretakers.

École de technologie supérieure (ETS) — Montreal (Remote)
Research Intern — September 2022 - June 2023

Conducting research on the efficacy of semi-supervised learning approaches for Medical Image Segmentation.

PayPal — Chennai
Software Engineer — July 2019 - August 2022

Backend engineer on the OmniPayments team. Have worked on projects in payment network expansion and compliance domains, where major responsibilities included integrating new partners into the PayPal network across payment domains, complying with local regulations and ensure end-to-end seamless operation.

Healthcare Technology Innovation Centre, IIT Madras Research Park — Chennai
Research Intern — May 2018 - July 2019

- Was part of the Deep learning team in the Image Computing group. Conducted research in Medical Image Analysis, specifically in the domains of Image Segmentation and Reconstruction. The work resulted in several publications in leading Medical Imaging Conferences.

- Applied state-of-the-art deep learning architectures while participating in challenges in different imaging modalities - *Retinal Fundus Images* for Identification of Glaucoma, *Colonoscopy Videos* for polyp detection and *Histopathological Whole-slide Images of Cancer* for Mitotic Cell Detection, one of the strongest prognosticators for invasive breast carcinoma.

IIT Delhi Delhi
Intern May 2017 - July 2017

Worked in the Data Analytics and Intelligence Research (DAIR) Lab under Prof.Maya Ramnath on the proposal "Supporting instant search on graphs using keyword queries". Implemented an interface which supports auto-completion of keywords while the user is typing and dynamic results for the part of the query entered.

Skills and Areas Of Interest

Programming Languages:	C, C++,Python,MySQL, HTML,JS,PHP,Verilog HDL
Areas Of Interest:	Deep Learning, Software Development
Relevant Online Courses Undertaken :	Deep Learning Specialization - Andrew Ng
	Neural Networks for Machine Learning - Geoffrey Hinton
Relevant Frameworks/Libraries Used :	TensorFlow,PyTorch,Scipy,Skimage,Pandas,three.js

Projects

C++
Implemented a graph container class and standard graph processing algorithms.
`https://github.com/project-prosper`

HTML, three.js
An Endless Runner type Video Game where the Player's Objective is to bypass obstacles and collect points.
`https://strangerwoods.herokuapp.com`

Design Project - Express
Worked on designing and pre-prototyping a smart pen which could write on most surfaces in an office scenario (in a group of 5).
`https://drive.google.com/drive/u/1/folders/1YYjdzek388EQbSg0ErAOF34FfzBHKIxh`

Achievements/Other Activities

Deep Learning

- *Presented papers at SPIE 2019, San Diego and MICCAI 2019, Shenzhen.*
- *Reviewer at Machine Learning for Health(ML4H) Symposium, 2021.*
  `https://ml4health.github.io/2021/`
- *Reviewer at Machine Learning for Health(ML4H) Workshop, NeurIPS 2019.*
  `https://ml4health.github.io/2019/`
- *Reviewer at ACM Conference on Health, Inference, and Learning (CHIL 2020)*
  `https://www.chilconference.org/`
- *Placed 2nd in the Onsite Classification Task in the "Gastrointestinal Image ANAlysis (GIANA)" sub-challenge, a part of the Endoscopic Vision Challenge(EndoVis) Challenge, MICCAI 2018.*
  `https://endovis.grand-challenge.org/`

Chess

- *International Level Chess Player with a FIDE Elo Rating of 2126.*
  `http://ratings.fide.com/card.phtml?event=5036020`
- *Represented PayPal in the 1st FIDE Online World Corporate Chess Championship.* *February 2021*
  `https://worldcorporate.fide.com/`
- *Captain of the Chess Team which won Gold at the IIIT Inter Collegiate Sports Meet.* *December 2016*

Teaching Assistant *IIITDM Kancheepuram*
Performed TA duties for the course Operating Systems(COM301/301P) *July - November 2018*