AKSHAYKUMAR GUNARI

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Career Objective

Seeking a dynamic job in a highly regarded company where I can confidently utilize my skills and flair to bring about a productive change within myself and thus aim towards a broader perspective of developing along with the company.

Experience

- **Juniper Networks India Private Limited [🌐]** *Bangalore, India*
  Software Engineer - 2 March 2024 - Present 0 year(s) and 11 month(s)
  - Working in the Linux Platform Development Team on bringing up QFX-5K Series Switches.
  - My responsibilities include the development of various daemons (on Junos EVO OS: a unified, end-to-end network OS widely deployed in most of the Juniper Networks products) related to the platform side (Routing Engines) on the Networking switches, mainly designed for Data Centers.
- **AMD India Private Limited [🌐]** *Bangalore, India*
  System Software Designer - 2 May 2023 - March 2024 0 year(s) and 10 month(s)
  - I moved to the Linux Platform Driver Team for Server BU, where I was involved mostly in DMA, Non-Transparent Bridge device driver development activities on Server Platforms.
  - Also worked on the development of linux tools which helped in the performance evaluation of the DMA Engine, **dma-perf** was one such tool which was customized integration of dma-test and ntb_perf tool.

  System Software Designer - 1 *July 2021 - May 2023* *1 year(s) and 10 month(s)*
  - I was part of Sensor Fusion Hub team, where I was responsible for the enablement of various **H**uman **P**resence **D**etection **(HPD)** sensors and Ambient Light Sensors (ALS) on the ARM Cortex M4 co-processor.
  - I was responsible for the enablement of firmware for TDK CH201, Altek Sunny M1 HPD sensors on AMD MP2.
- **Centre of Excellence in Visual Intelligence [🌐]** *Hubli, India*
  Research Intern March 2021 - July 2021 0 year(s) and 4 month(s)
  - Worked on a DST project under Dr. Uma Mudenagudi's guidance towards categorizing crowdsourced data involving 2D and 3D data.
  - During my tenure at CEVI, I got a chance to publish four research papers at various national and international conferences.
- **Indian Institute of Technology - Delhi [🌐]** *New Delhi, India*
  Project Trainee June 2019 - July 2019 0 year(s) and 2 month(s)
  - Worked on a project - Endoscopic Tool Tracking which was a Collaborative Neuro-Engineering Platform Building for Excellence in Innovation and Translational Research (RP03571G) Internship Certificate.

Education

- **Birla Institute of Technology [🏢]** *Pilani, India*
  Masters of Technology in Artificial Intelligence and Machine Learning May 2024 - Pursuing
  - GPA: Pursuing
- **KLE Technological University [🏢]** *Hubli, India*
  Bachelor of Engineering in Computer Science August 2017 - July 2021
  - GPA: 9.02/10.00
- **Chetan PU Science College [🏢]** *Hubli, India*
  Pre-University Education (PCMS) May 2017
  - Grade: 90.5%
- **Chetan Public School [🏢]** *Hubli, India*
  Secondary Education March 2015
  - Grade: 94.40%

Projects

- **NTB and DMA Driver Development: [Associated with AMD India Pvt Limited]** *January 2023 - March 2024*
  Domains: [Linux Kernel, DMA, Non Transperant Bridge] [🌀]
  - I have worked as a Linux Kernel Engineer to bring up the Linux kernel driver for Non-Transparent Bridge and DMA Controllers on different Server Platforms.
  - I was also a key contributor in developing various in-house helping kernel modules which was designed to get the performance evaluation of NTB data transfer over DMA between two server platforms.
- **Designing and Enablement of Zephyr RTOS: [Associated with AMD India Pvt Limited]** *March 2022 - December 2022*
  Domains: [RTOS, Zephyr, ARM Processors, Device Tree] [🌀]
  - Designed, developed, and ported the Zephyr RTOS to the ARM Cortex-M4 co-processor whose functionality was mainly around the various sensors clumped together, making the client platforms smarter.
  - Ported changes related to the device tree, memory configurations, and sensor data analysis.
- **HPD Sensors Enablement: [Associated with AMD India Pvt Limited]** *July 2021 - December 2022*
  Domains: [Firmware, Sensors Enablement, I2C Protocol] [🌀]

- To enable various camera-based and non-camera-based **H**uman **P**resence **D**etection (HPD) Sensors and Color Sensors on ARM Cortex-M4 co-processor. Built an in-house library for enablement of various other sensors like accelerometer (+gyrometer) and magnetometer.
- To channelize the data communication from the firmware through the driver to the service running on the Windows OS.

- **Progressive Clustering: [Associated with Centre of Excellence in Visual Intelligence (CEVI)]** *January 2021 - July 2021*
  Domain: [Deep Learning, Computer Vision, Incremental Learning, Unsupervised Learning] [🌐]
  - As the Research Experience for Undergraduates (REU), we proposed a framework to find the arbitrarily shaped clusters, incremental in nature, with dynamically growing datasets exhibiting the increment of the dataset not just with respect to class (Class-Incremental) but also in the distribution of each class.

- **ABD-Net: [Associated with Centre of Excellence in Visual Intelligence (CEVI)]** *March 2021 - June 2021*
  Domains: [Deep Learning, Computer Vision, 3D Vision, Point Clouds, Unsupervised Learning] [🌐]
  - As a research interns group, my team proposed **A**ttention **B**ased **D**ecomposition - **Net**work **(ABD-Net)**, for point cloud decomposition into basic geometric shapes namely, plane, sphere, cone and cylinder.

Patents and Publications

C=Conference, J=Journal, P=Patent, S=In Submission, T=Thesis

[C.1] Akshaykumar Gunari, et al. (2022). **Progressive Clustering: An Unsupervised Approach Towards Continual Knowledge Acquisition of Incremental Data**. In *ICPRAI 2022 - 3rd International Conference on Pattern Recognition and Artificial Intelligence. (Conference held in Paris, June 01)*, pp. 355–367. Publisher. 01 June 2022, Paris. DOI: 10.1007/978-3-031-09282-4_30

[C.2] Akshaykumar Gunari, et al. (2022). **ABD-Net: Attention Based Decomposition Network for 3D Point Cloud Decomposition**. In *The first Workshop on Structural and Compositional Learning on 3D Data - ICCV 2021*, IEEE Xplore. 16th October 2021, Held Virtually. DOI: 10.1109/ICCVW54120.2021.00232

[C.3] Akshaykumar Gunari, et al. (2020). **Augmented Data as an Auxiliary Plug-In Toward Categorization of Crowdsourced Heritage Data**. In *Workshop on Digital Heritage (WDH) 2021*, pp. 53-62. Springer, Singapore. 22nd December 2021, IIT-Jodhpur, India. DOI: 10.1007/978-981-19-4136-8_4

[C.4] Akshaykumar Gunari, et al. (2020). **Deep Visual Attention-Based Transfer Clustering**. In *Fourth International Conference on Computing and Network Communications (CoCoNet'20)*, pp 357–366. Springer, Singapore. 14th October 2020, Chennai, India. DOI: 10.1007/978-981-33-6987-0_29

[P.1] Siddharth Katageri, Akshaykumar Gunari, Shashidhar V Kudari, et al. (2022). **System for Attention-Based Decomposition of 3D Point Clouds**. Registration Date: 18th March 2022.

Skills

- **Programming Languages:** C, C++, Python, Shell
- **Industry Knowledge:** Operating Systems, Linux Kernel Programming, Device Drivers, Machine learning, Yocto Project, RTOS.
- **Tools:** Git, Jupyter Notebook, Spyder, Pycharm, VS Code, Google Colab, Tensorflow, Pytorch.
- **Data Science & Machine Learning:** Deep learning, Image Processing, Computer Vision

Honors and Awards

- **Spotlight Award** *December 2021*
  AMD India Private Limited
  - Developed a feature for measuring the various Firmware Boot timestamps during an S2-Idle Cycle in **S**mart **T**race **B**uffer **(STB)** Parser.
  - It was a crucial requirement from Google for their Chromebook laptops.

- **Spotlight Award** *January 2022*
  AMD India Private Limited
  - As a lab warrior spot light award

- **Spotlight Award** *December 2022*
  AMD India Private Limited
  - For enabling a CH201 - TDK InvenSense HPD Sensor.
  - This was a requirement from HP to integrate five class of sensors (Accelerometer, Gyroscope, Magnetometer, Ambient Light, and HPD Sensors) on the co-processor.

Co-curricular and Extra-Curricular Activities

- **Workshops and Events** *August 2018 - July 2021*
  KLE Technological University [🌐]
  - Conducted a workshop on the Basics of Image processing, Machine Learning, and volunteered in various cultural and technical events conducted in college.
  - Attended a workshop on 3D Computer Vision (Sponsored) at IIIT-Hyderabad
  - Competed in a Kaggle Competition titled **"Categorical Feature Encoding Challenge"** and ranked **52/1342** - December 9, 2019.
  - Participated in TCS Tech-bytes, Smart India Hackathon - 2019.

Certifications

- **Stanford University on Coursera:** Machine Learning Course *August 2020*
- **NPTEL Certification:** Problem Solving In C *January 2018*
- **NPTEL Certification:** Data Structures And Algorithms in Python *January 2019*

PERSONAL DETAILS

Father's Name: Shrinivas Gunari
Mother's Name: Akshata Gunari
Date of Birth: 18/08/1999
Languages Known: English, Kannada, Hindi.
Interests/Hobbies: Playing Volleyball, Listening to Music, Traveling, and Surfing.
Permanent Address: H. No 137, Akshay Colony, 1st Phase, Gokul Road, Hubli, 580-030.

Declaration: I, hereby declare that the above-provided information is true to the best of my knowledge.

Date: Wednesday 19th February, 2025

(Akshaykumar Gunari)