SAM KOSHY THOMAS

Phone: +61-0426736496| Email: samkoshythomas@gmail.com | LinkedIn: www.linkedin.com/in/samkoshythomas
GitHub: https://github.com/thethomasam

SUMMARY

A highly motivated individual specializing in the integration of diverse systems in complex environments. I bring a proven track record in Full stack Development and Scripting. My background revolves around academia, and I believe my experiences can help streamline system interoperability and improve user experiences in library settings.

TECHNICAL SKILLS

- **Programming languages**: JavaScript, Python, C.
- **Frameworks/ Tools**: Rails, React, DVC, PowerBI, PyTorch, Tensorflow, JAX,
- **Database Tools**: MYSQL, Postgres, mongodb.
- **Cloud Technologies**: AWS.
- **Operating systems**: Macintosh, Windows, Raspbian.

WORK EXPERIENCE

Machine Learning Intern at *Australian Institute of Machine Learning, Adelaide*   **November - December 2023**

- Developed an ML pipeline facilitating researchers to analyse drone images and extract emergence to predict yield.
- Utilised YOLOv8 object detection framework for accurate plant growth identification.
- Innovated with NDVI thresholding to construct a comprehensive object detection dataset.
- Implemented weed detection using colour and NDVI thresholding techniques.
- Utilized a single-shot image segmentation model (Seg-GPT) for efficient stubble detection.

Teaching Lecturer at *University of Adelaide, Adelaide.*   **July 2022 - Present**

- Demonstrated practicals (3 Sessions x 40 students) per week for the subject of **Web and Database Computing** (**COMP SCI 2207).**
- Developed and implemented engaging course materials, including lecture slides, case studies, and interactive activities.
- Mentored and supervised graduate students in their research projects, providing guidance and feedback on their methodologies and findings.
- Mentor individuals to apply learned technologies using project works.

Tech Mentor at *Academy Xi, Sydney*   **July 2022 - August 2023**

- Mentor students on facets of Ruby, JS (React), HTML, CSS and Python.
- Planning short and longer-term lessons to provide motivation and challenge students.
- Setting tasks for class and individual work ensures high levels of student interest.
- Mentor individuals to apply learned technologies using project works.
- Keep records of grades and papers, and perform other administrative duties as needed.

Data Analyst and Full Stack Developer at *TwinX, TATA Consultancy Services Ltd*. , Delhi   **Aug 2020 - Jan 2022**

- TwinX is a data-driven digital twin product, a simulator that helps construct hypotheses, model entities and test business decision outcomes in a virtual A/B testing model.

- Contributed to product discussions and roadmap and collaborated with designers, data scientists & clients to create a customer-centric product.
- Converted data to actionable insights by data modelling techniques.
- Developed visually impactful dashboards to project business KPIs.
- Engaged in code reviews and ensure the codebase's quality.
- Developed CI/CD pipelines for web app deployment.
- Translate UI /UX designs from wireframes to actual code that will produce visual elements of custom analytics products and web applications.
- Developed and integrated backend API services using Django and REST Framework.
-

Research Fellowship at *Pawsey Supercomputing Centre [CSIRO], Perth* **November 2022 - May 2023**

- Developed a Novel Adaptive Weighted Supervised Autoencoder designed to produce simulations, test, and optimize performance of digital twins by analysing different scenarios and predicting how the system will behave under different conditions.
- Collaborated with a team of researchers to publish a paper on Adaptive weighted Supervised Auto Encoder as a digital twin test bed.
- Collaborated with domain stakeholders to identify operational flaws to develop digital engine.
- Designed and conducted experiments in High Performance Computing environment to evaluate performance and accuracy of the model.
- Developed workflows to deploy experiments to the supercomputing infrastructure.
- Engaged in Pawsey's in house trainings and discussions for using a High Performing Computer.

Summer Research Intern at *Australian Institute of Machine Learning, Adelaide* **February - June 2023**

- Conducted in-depth study of various transformer models, including the ViT, BERT models to understand their architecture, training procedures, and applications.
- Collaborated with stakeholders to improve robustness of deep learning models in vision tasks using the ViT Plex model and the novel evaluation metrics.
- Developed a robustness evaluation package for the ViT Plex model by implementing various metrics.
- Designed evaluation metrics to measure models Uncertainty, Robust generalisation, and Adaptation.

RELEVANT PUBLICATIONS and PROJECTS

- Namrata Bhattacharya, Anja Rockstroh, Sanket Suhas Deshpande , **Sam Koshy Thomas**, Smriti Chawla, Pierre Solomon , Cynthia Fourgeux , Gaurav Ahuja , Brett G. Hollier , Himanshu Kumar , Antoine Roquilly , Jeremie Poschmann , Melanie Lehman, Colleen C. Nelson, Debarka Sengupta, December 2022, "Latent representation of single-cell transcriptomes enables algebraic operations on cellular phenotypes".
- **Sam Koshy Thomas**, Dr Md Redowan Mahmud, Dr Aneesh Krishna, March 2023, "Digital Twin Engine for Red Meat Industries".

EDUCATIONAL QUALIFICATIONS

Degree	Institute	University/Board	Year	CGPA
Master of Data Science	University of Adelaide	University of Adelaide	2022	6.2/7GPA
B. Tech in Electronics and Communication	Jaipur Engineering College and Research Centre	Rajasthan Technical University	2016	69.8%

ACHIEVEMENTS

- Summer Research Scholarship at **The University of Adelaide**.
- Summer Research Fellowship with Pawsey **Supercomputing Centre** and **Curtin University**.
- Participated in Smart India Hackathon (**FarmEase**) and qualified for 2nd round in 2019.

REFERENCES

Dr Lewis Mitchell
lewis.mitchell@adelaide.edu.au
The University of Adelaide, Adelaide

Mr Treven Leonard
trevene.leonard@fphgroup.com.au
Flinders Port Holdings