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PROFILE

🌐 ktnoor.github.io

A highly competent researcher with a strong focus on deep learning, specifically experienced in neural network architecture design, algorithm implementation, and advanced AI model and system testing. I have strong communication and project planning skills within collaborative team environments. My PhD research focuses on innovative neural network methodologies, and I am pursuing a career to leverage my research, technical, and design expertise within artificial intelligence systems to unlock commercial value.

EDUCATION

Deakin University — Doctor of Philosophy

Current

Pursuing a PhD in Information Technology with a research focus on developing deep learning models for image classification. Recipient of the prestigious Deakin University Postgraduate Research Scholarship (DUPR). Published multiple research papers in top-tier conferences and journals. My anticipated completion date is July 2025.

Macquarie University — Master of Engineering in Electronics Engineering

November 2019

Achieved Vice-Chancellor's International Scholarship and completed a Master of Engineering degree with a specialisation in Electronics Engineering. Gained in-depth knowledge in the areas of analogue and digital electronics. Adapted technical and practical skills for electronic systems and circuit design by completing electronic projects as a part of coursework.

EMPLOYMENT EXPERIENCE

Sessional Academic — Deakin University, Waurin Ponds, Australia

Sep 2022 – Current

I am currently working as a sessional academic staff member, contributing to the Deep Learning (SIT319, SIT744) and Artificial and Computational Intelligence (SIT215) units. My responsibilities include:

- Designing, demonstrating, and explaining deep learning models using PyTorch, Keras and TensorFlow.
- Addressing student queries to enhance their understanding and engagement.
- Providing academic consultations and contributing to the development of course materials.

Firmware Engineer — EMVision Medical Devices Ltd.

Mar 2021 – Sep 2021

EMVision is an innovative medical device company developing portable electromagnetic microwave imaging solutions. My responsibilities included:

- Inspecting, developing, and validating device testing plans.
- Designing a GUI for device testing and automating the test bench analysis process.
- Documenting product specifications, installation procedures, and testing protocols.
- Researching emerging technologies and optimising processes to improve testing workflows and foster innovation.

Testing Engineer — RF Technology

Feb 2020 – Dec 2020

RF Technology is a leading Australian manufacturer of wireless communication products. My responsibilities included:

- Programming, testing, and ensuring the quality of digital radios, power amplifiers, and power supplies.
- Documenting, implementing, and verifying testing processes for all products.
- Enhancing product quality by refining hardware designs and advancing RF module expertise.
- Guiding the production team and ensuring timely product status updates.

RESEARCH AND PROJECTS

- **Publications:** I have original research published to top-tier conferences and journals. Key publications include:

- ▶ *Taxonomy-Guided Routing in CapsNet for Hierarchical Image Classification*, Knowledge Based Systems (2025).
- ▶ *H-CapsNet: A Capsule Network for Hierarchical Image Classification*, Pattern Recognition (2024).
- ▶ *A Consistency-Aware Deep Capsule Network for Image HMC*, Neurocomputing (2024).
- ▶ *A Bottom-Up Capsule Network for Hierarchical Image Classification*, DICTA (2023).
- ▶ *A Capsule Network for Hierarchical Multi-label Image Classification*, S+SSPR (2022).

- **Key Projects:** I have delivered notable research and industry-oriented projects, most notably:

- ▶ Designing Deep Neural Architectures tailored for hierarchical multi-label classification.
- ▶ Developing a GUI-Based Automation System for testing medical devices.
- ▶ Smart Sun Exposure: Enabling wireless UV sensing for personalised sun exposure monitoring.
- ▶ Designing and Implementing a Reconfigurable Antenna for wireless communication.

SKILLS AND EXPERTISE

SOFTWARE AND TECHNICAL SKILLS

- **Documentation and Office Tools:** Proficient with Microsoft Office Suite and LaTeX for professional documentation and record keeping.
- **Machine and Deep Learning:**
 - ▶ Skilled in classical ML (scikit-learn) for regression, classification, clustering, and dimensionality reduction.
 - ▶ Proficient in deep learning frameworks (PyTorch, Keras, TensorFlow) for building and training neural networks.
 - ▶ Strong theoretical grounding in optimization algorithms (SGD, Adam, AdamW, RMSprop, etc.), probability/statistics, backpropagation, and advanced loss functions.
- **Data Analysis and Visualisation:** Experienced in data wrangling and feature engineering with Pandas, NumPy, and visualisation using Matplotlib or Seaborn.
- **GPU Computing and Cloud Infrastructure:** Working knowledge of NVIDIA CUDA for accelerated model training and inference, with experience in cloud computing platforms (AWS, Google Cloud, Azure) for scalable AI/ML workloads and distributed computing.
- **Programming Languages:** Working knowledge of Java, C++, Python, and MATLAB for algorithm development, data analysis, and numerical computing.
- **Version Control and Collaboration:** Proficient in Git (GitHub, GitLab) and CI/CD workflows for collaborative software development.
- **Embedded Systems and MCU/MPU:** Programmed and prototyped solutions using Arduino and Raspberry Pi, integrating sensors, actuators, and peripheral modules.
- **Hardware Prototyping:**
 - ▶ Designed schematics and PCBs using Altium (including BOM, pick-and-place files, 3D models).
 - ▶ Oversaw PCB fabrication, component soldering/assembly, and conducted functional testing.
- **Digital Electronics and FPGA Design:**
 - ▶ Implemented digital logic with Xilinx ISE, Electric VLSI, and LTspice.
 - ▶ Prototyped and validated designs on FPGA boards for functionality and timing.
- **Electronics Simulation, RF and Antenna Design:** Modeled, designed and analysed electronic systems with AWR, Proteus, PSpice, PSim, CST Studio etc.

PROFESSIONAL AND INTERPERSONAL SKILLS

- **Teamwork and Collaboration:** Collaborated effectively in academic and workplace settings, balancing individual tasks and group dynamics to achieve project objectives.
- **Leadership:** Led multiple academic projects, guiding team members and ensuring successful deliverables for high-profile events.
- **Public Speaking and Presentation Skills:** Delivered numerous presentations in coursework and competitions, including research findings at international conferences and workshops.
- **Adaptability and Quick Learning:** Quickly acquired new technical skills and processes in various roles, adapting to new environments and challenges with ease.
- **Problem-Solving and Critical Thinking:** Skilled in diagnosing and resolving complex technical issues, ensuring optimal performance and reliability.

RESEARCH AND INDUSTRY KNOWLEDGE

- **Research Skills:** Proficient in advanced methodologies, experimental design, data analysis, and literature reviews.
- **Electronics Test Equipment:** Skilled in operating and analysing data from RF spectrum analysers, vector signal analysers, high-speed oscilloscopes, and RF test sets.
- **RF Implementation and Regulatory Compliance:** Hands-on experience in designing, testing, and analysing RF modules, including regression testing and certification procedures to meet regional regulatory standards.
- **Project Management:** Proficient in planning, coordination, and execution of academic and professional projects, ensuring timely delivery and quality outcomes.

ADDITIONAL INFORMATION

- Successfully participated and completed “Empowering Innovative Leaders Program, (2024)” at Deakin University.
- **Certifications:**
 - ⚙ Battery Management Systems (2024).
 - ⚙ Professional Engineer (Engineers Australia, 2023).
 - ⚙ TensorFlow Developer (DeepLearning.AI, 2022).
 - ⚙ IT Automation with Python (Google, 2022).
 - ⚙ AI Engineering (IBM, 2021).
 - ⚙ Digital Systems (UAB, 2021)
 - ⚙ Specialisation in Programming the IOT (UCI, 2020).
 - ⚙ PCB Designing (Udemy, 2020).
- **Peer Reviewer:** Reviewed papers for conferences such as KSEM, AICCSA, ECAI, PAKDD and journals such as Pattern Recognition, Information fusion, Neurocomputing, Neural computing and applications, and MethodsX.

REFERENCES

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