SINUO WANG

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PERSONAL SUMMARY:

I am a passionate female master's student in Artificial Intelligence and Machine Learning at the University of Adelaide. My studies are backed by several successful internships and research where I had opportunities to apply my knowledge of machine learning theories to real-world applications. I am keen to join a team of likeminded people where I can contribute my ideas, inspirations, and skills.

EDUCATION

01/2022 – PRESENT   STUDENT AT THE UNIVERSITY OF ADELAIDE (EXPECTED COMPLETION 12 / 2023)
MASTER OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING (GPA 7.0/7.0)
STRONG UNDERSTANDING OF MACHINE LEARNING (ESPECIALLY IN MULTIMODAL MACHINE LEARNING, COMPUTER VISION, FAIR AND INTERPRETABLE AI, LARGE LANGUAGE MODELS, AND GENERATIVE MACHINE LEARNING)

07 / 2017 – 07 / 2021   STUDENT AT THE UNIVERSITY OF ADELAIDE
BACHELOR OF ELECTRICAL AND ELECTRONIC ENGINEERING (AUTONOMOUS SYSTEMS) (HONOURS)
STRONG UNDERSTANDING OF CONTROL SYSTEMS, ELECTRICAL DRIVE SYSTEMS, AND SOLID BACKGROUND IN MATHEMATICS

PROFESSIONAL EXPERIENCE

MACHINE LEARNING RESEARCH STUDENT
AUSTRALIAN INSTITUTE FOR MACHINE LEARNING (AIML), ADELAIDE, SOUTH AUSTRALIA, JUN 2023 – PRESENT
- Developing a multimodal foundation model using vision-language pre-training (VLP). Specifically, we are using 3 hierarchical levels of contrastive learning objectives with our novel text-guided data augmentation technique to alleviate the scarcity of medical data.

MACHINE LEARNING INTERN
IRL-CROSSING, CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE (CNRS), ADELAIDE, SOUTH AUSTRALIA, SEP 2022 – JULY 2023
- Our team is developing the humanoid companion robot Pepper using machine learning for the international robotics competition RoboCup@Home. The tasks take place in a domestic environment where the robot has to address human needs (e.g., tidy up the room, find and bring drinks).
- World Champion of the international competition for RoboCup@Home – Social Standard Platform League, 2023.

SUMMER RESEARCH INTERN
AUSTRALIAN INSTITUTE FOR MACHINE LEARNING (AIML), ADELAIDE, SOUTH AUSTRALIA, JAN 2022 – APRIL 2022
- As part of the partnership between the AIML and the Women's and Children's Hospital, we focus on the interpretation of ^{99m}Tc-MAG3 renal scans and trained two machine learning models, random forest and CNN to predict future surgical decision-making. We also studied the interpretability and demographic biases present in the models that are based on hand-crafted features and the deep learning approach.

SUMMER RESEARCH INTERN

THE UNIVERSITY OF ADELAIDE, ADELAIDE, SOUTH AUSTRALIA, NOVEMBER 2021 – JAN 2022

- Given the current open-source C library and binary (Assemblyline) that generates machine code for Intel x86_64 assembly language and provides the ability to directly execute on the fly, we built upon this project and add support for the ARM AArch64 architecture.

ELECTRICAL AND ELECTRONIC INTERN

MAXONIC AUTOMATION CONTROL CO, LTD, SHENZHEN, CHINA, DECEMBER 2019 – MARCH 2020

- Our team was working on the industrial Kuka Robot 3D vision integration project, in which the robot was programmed to be able to assemble hardware in the Honda vehicle production line. My main duty included completing electrical schematics in the field and confirming the relevant electrical circuit according to the design.

PUBLICATIONS

- RoboCup Symposium 2023 (Under Review)
  RoboCup@Home SSPL Champion 2023: RoboBreizh, a Fully Embedded Approach
  Cédric Buche, Maëlic Neau, Thomas Ung, Louis Li, **Sinuo Wang**, and Cédric Le Bono

- RoboCup Symposium 2023 (Oral, Best Paper Candidate)
  RoboNLU: Advancing Command Understanding with a Novel Lightweight BERT-based Approach for Service Robotics
  Sinuo Wang, Maëlic Neau and Cédric Buche

- SPUNZA Conference 2022 Abstract
  Machine Learning Appraisal of Initial MAG3: Predicting Surgical Management in Paediatric Hydronephrosis
  Sinuo Wang, Cheryl Nicholson, Gabriel Maicas Suso, Ian Kirkwood, Bridget Connolly, and Sanjeev Khurana

HONORS & AWARDS

WORLD CHAMPION OF THE INTERNATIONAL COMPETITION FOR ROBOCUP@HOME

- 1st Place in RoboCup@Home Social Standard Platform League (SSPL), 2023, Bordeaux France

EXECUTIVE DEAN'S RECOGNITION OF ACADEMIC EXCELLENCE 2022

- In recognition of outstanding academic achievement for studies in the Masters of Artificial Intelligence and Machine Learning

SKILLS

- **Programming Languages**
  - Proficient in Python, C++, C, and MATLAB
  - Familiar with Simulink, LabVIEW, and assembly (ARM AArch64)

- **Tools**
  - NumPy, Pandas, PyTorch, TensorFlow, Wandb, ddp, Hugging Face, and scikit-learn

- **Languages**
  - English
  - Mandarin

REFERENCES

- Prof. Cédric Buche – Full Professor at Ecole Nationale d'Ingènieurs de Brest (ENIB), France
  - Organisation: ENIB | CNRS | The University of Adelaide | Flinders University
  - Email: cedric.buche@cnrs.fr

- Dr. Gabriel Maicas Suso – AI Lead for Women's and Children's Hospital (North Adelaide)
  - Organisation: Australian Institute for Machine Learning, Adelaide, SA 5005
  - Email: gabriel.maicas@adelaide.edu.au

- Dr. Yuval Yarom – ARC Ext-Funded Research Fellow
  - Organisation: The University of Adelaide, Adelaide, SA 5005
  - Email: yval@cs.adelaide.edu.au
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