HE SUN

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PERSONAL PROFILE

I am an interdisciplinary creator who specializes in machine learning, classical Chinese poetry, and religious studies. I search for the measurable Tao of creation, applying AI and other cutting-edge technologies in unexpected areas.

EDUCATION

University of Nottingham, Ningbo, China
Computer Science with Artificial Intelligence (2+2 program)
Year 1 GPA 3.83/4.0
Weighted Numerical Average Mark 80%
(70% is First-Class Honor)

Sep 2021 – Present

HONORS

Zhejiang Provincial Scholarship
2021-2022 University of Nottingham Dean's Scholarship
Oxford AI & ML Program Outstanding Certification
Consortium for Mathematics and its Applications Student Membership

Oct 2022
to be designated
Sep 2022
Oct 2022

ENGLISH ABILITY

IELTS 7.5   Listening 9.0, Reading 8.5, Writing 6.5, Speaking 6.0

Jul 2022

MAIN AWARDS

As Team Captain & Programmer:

May 2022

Mathematical/Interdisciplinary Contest in Modeling (MCM/ICM), M Award (1st Prize, 7.09%)

- *organized online seminars and self-study sharing sessions and launched 2 mock contests*
- *predicted asteroid mining impact on global equity in five decades via multiple machine learning methods (SVM, PCA, Gray Correlation, etc.) and visualized the results*
- *revived morale w/ an impromptu talk when a sudden GPU failure brought the team to pressure threshold & timely resolved to switch from Python to Julia for efficiency gains*
- *enhanced team stress management & coordination skills and applied them in club revenue generation*

UNNC Mathematical Modeling Contest, 1st Award

August 2022

- *built an epidemiological model with a standard disease incidence extended from Lotka-Volterra system to simulate the interaction between the epidemic and Earth's biosphere*

UNNC Computer Vision Competition, 3rd Place Winner

June 2022

- *tackled problems of advanced CV program design & an extra bonus about multi-model recognition, earning the highest score of all candidates (1445 points) but the 4th-year seniors*

UNNC Hackathon, 2nd Place Winner

Nov 2021

M5-201 Encryption & Decoding Contest, 2nd Place Winner

Nov 2021

As Classical Chinese Poet:

Zhejiang Province Essay Competition, 1st Prize (12/7000)

Feb 2021

- *Dialogue of River Zhi pioneered an innovative poetic structure with 9 diverse dialects, discussed poverty alleviation & ethnic minority issues*

Zhejiang Daily & Qianjiang Evening News, Monthly Championship

May 2015

- *Song-Dynasty-style ancient poem "White Heron" called for wetland protection and moratoriums on bird hunting in a magical realist approach*

Mandarin Corner Originals, Special Prize (1/300)

Apr 2022

- *Tiger, written in Tang calligraphy & an extinct genre "Music Fu", presented a critical metaphor of modernity & war*

Others:

National Junior School Mathematics Competition, 2nd Prize

May 2017

- *one of the highest-level middle school math competitions in China, covering such topics as Corsi's inequality, Dymov's theorem, and the existence and properties of Simson's line*

UNNC Most Influential Campus Club of the Year (Sports)

Jan 2022

- *for the popularity and prestige of the club I started, Nottingham Alliance of Sports Archery*

RESEARCH/INTERNSHIP

NLP Summer Research Assistant

Computer Science and Artificial Intelligence Laboratory, University of Nottingham, Ningbo, China

May 26 – Jul 30, 2022

- *explored the feasibility of Bert-like models for machine reading comprehension of small text in specialized areas*
- *selected and blended different classes of Bert-like models to pursue better performance on small text data obtained from medical illustration videos*
- *trained a field specific MRC model for medical Q&A tasks, tunning parameter, testing and evaluating the performance*
- *increased deep learning skillsets by interacting with supervisor and Ph.D. students; attained a deeper understanding of DL & RL formulas*
- *research contributed to the Ningbo Sci & Tech Innovation Program*

Computer Vision Algorithm Engineer

UNNC RoboMaster Team, Faculty of Science and Engineering

Nov 01, 2021 – Jan 10, 2022

- *assisted the team captain in managing the project schedule with Gantt charts*
- *developed and optimized the vision algorithm for the Sentry Robot (a scout agent maneuvering on a slide) and adapted YOLO5 to implement the recognition/ tracking algorithm in a competition*
- *deployed the project to OpenVino to interface with the hardware department*
- *experimented with evaluating the target recognition capabilities of the Sentry and Hero robots in the field and iterating the algorithm*
- *made code refactoring contributions when the framework shifted from TensorFlow to PyTorch*

AI & ML Student

University of Oxford AI & Machine Learning Summer Program (online)

Sep 01, 2021 – Mar 09, 2022

- *analyzed machine learning methods with detailed formula derivation and coding*
- *built and trained deep neural networks using TensorFlow & Keras, identified key architecture parameters & finetuned, took hands-on exercises on reinforcement learning*
- *attended interdisciplinary lectures and learned planning & motion control in robotics*
➢ **Astrophysical Composition Analysis Project (Oxford Assignment)**
- *scored an A & gained a high-rank scholarship (3+ ML methods required, I implemented 17)*

EXTRA-CURRICULARS

Co-founder & Vice President

Nottingham Alliance of Sports Archery (China)

Sep 21, 2021 – Current

- *discovered the demand gap during online sports course selection and established the university archery club; recruited new members to explore personality and skill combinations*
- *controlled equipment costs and designed a reservation model; introduced a card reward strategy and joined 12 restaurants around campus to promote*
- *initiated archery activities below; designed targets, sampled the archery levels of the crowd & estimated the probability distribution of winning to ensure both 7 levels of diverse prize giveaways and zero waste; negotiated with charities to protect stray cats with the profits*
➢ **Stellar Archers**
- *astronomy-themed archery activities providing celestial sphere targets, professional star-gazing experience and prize draws with astronomical elements*
➢ **An Arrow Through Aeon**
- *Chinese culture theme archery activities providing painted porcelain targets I designed, traditional pot-throwing games, Han-styled garments, and prize draws with Taoism elements*

Classical Chinese Poet

Zhejiang Education Newspaper Administration, HQ; Zhejiang Daily; Qianjiang Evening News; Zhenhai High Public Channel; Mandarin Corner, UNNC

Jul 18, 2021 – Current

- *consistently create metrical poems in archaic Chinese and discuss social issues via them*
- *works have a certain influence and are appreciated by famous fiction writer Nan Pai San Shu*
➢ **Ode to Wan Qian**
- *included in the Poetry Works of Zhenhai High Public Channel for reporting the self-healing of a COVID-infected family; 200+ quarantined people inspired by this poem and escaped depression*

- ➢ **Dialogue of River Zhi**
- *won provincial 1st prize 12th place (12/7000) for pioneering an innovative poetic structure with 9 diverse dialects, discussed poverty alleviation and ethnic minority issues*
- ➢ **White Heron**
- *this Song-Dynasty-style ancient poem won monthly championship published on Zhejiang Daily, calling for wetland protection and bird hunting ban*
- ➢ **Tiger**
- *won special in Mandarin Corner originals, written in Tang calligraphy & an extinct genre "Music Fu", as a critical metaphor of modernity and war.*

I Ching & Tarot Counsellor
Independent, Self-started business

Mar 24, 2019 – Current

- *as a Taoist, run social media and offline divination business mainly offering I Ching and Thoth Tarot services; teach other Taoism practices such as Qimen Dunjia and Tai Yi Shen Shu*
- ➢ **Personal NLP Project,** How to compare occults quantitatively in the era of AI?
- *constructed a model that evaluates the effectiveness of various tarots based on Barnum effect using Word2Vec word-embedding algorithm*
- ➢ **Personal Front-End & NLP Project,** Thoth Tarot WeChat Applet
- *developed an automatic divination WeChat apple using WXML, WXSS and JavaScript*
- *integrated NLP machine reading comprehension Q&A models into the applet to optimize user experience with semi-automatic replies*

10K Run Enthusiast
Half-Marathon & 10K Run Committee, Zhejiang Athletic Association; Zhenhai High School Sports Centre

Aug 06, 2014 – Current

- *practiced hard in the neighborhood park, gradually increasing the running volume from 6000 meters to around 11000 meters*
- *insisted on completing a 10 K run once a week within 45 minutes since junior high school*
- *completed the Jiulong Lake Tour Run, West Lake Tour Run, and Bamboo Sea Marathon 10 km group; won the 5th place in the 1000-meter event in junior high school games; won the silver medal in the 10 km group in high school games*

VOLUNTEER EXPERIENCES

Machine Learning Tutor & Contest Team Leader
Computer Psycho Union

Oct 01, 2021 – May 05, 2022

- *as the tutor & leader of the tech club's ML team, instructed students on the fundamentals of ML, using introductory competitions on the Kaggle platform to aid in teaching*
- *guided students of multiple majors to combine AI technologies into their fields to create stunning things*
- *fell in love with the Feynman learning technique & applied it to my religious folklore study*
- *after a period of training, led the team to contests related to computer science and ranked:*
- ➢ 3rd in **UNNC Computer Vision Competition** with 1445 points (25 teams competed)
- ➢ 2nd in the **M5-201 Encryption & Decoding Contest** (RSA, SHA1, ECC algorithms, etc.).

Caregiver of Alzheimer's Patient
Dongyuan Community, Hangzhou, Zhejiang Province

Aug 05, 2021 – Mar 09, 2022

- *took care of community seniors, who have Alzheimer's disease by supporting them to walk for 30 minutes a day and organize regular full-body baths*
- *reviewed neuroscience papers to find scientific methods to relieve symptoms*
- ➢ The AlzheimEnder Program
- *I wrote a 40hz sound wave therapy program based on the Gamma Frequency Sensory Stimulation Method researched from Harvard and MIT papers, then set it to auto-play in different volume levels during deep and light sleep*
- *extending the method to other senior lounges*
- *the symptoms of 17 people improved from 6 (Moderately Severe) to 4 (Mild Dementia) on the Global Deterioration Scale*