

# YIP KENG KAN (JET)

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## EDUCATION

### National University of Singapore (NUS)

Aug 2017 - Dec 2021

- Bachelor of Computing in Computer Science, specializing in Artificial Intelligence (AI) & Computer Security
- NUS ASEAN Undergraduate Scholarship

## PUBLICATION

- **Yip Keng Kan**, Ke Xu, Hao Li, Jie Shi (2024). [VoiceDefense: Protecting Automatic Speaker Verification Models Against Black-box Adversarial Attacks](#) (Interspeech 2024)

## WORK EXPERIENCE

### Artificial Intelligence (AI) Engineer, Singapore Research Center, Huawei

Apr 2022 - Present

- Developed and patented VoiceDefence, an advanced defense mechanism against black-box **adversarial attacks** in **Automatic Speaker Verification (ASV)** systems, improving the state-of-the-art detection from an AUC of 0.4596 to 0.9506
- Invented and patented a **Vision Transformer (ViT)**-based content moderation technology to detect 40+ categories of unsafe AIGC, achieving detection accuracy above 99% and false positive rate of less than 2%
- Hands-on experience in **fine-tuning Stable Diffusion models**, compiling 300+ concepts and artistic styles for data augmentation
- Pioneered next-generation **invisible watermarking** technique for **Stable Diffusion** models, making watermarks robust to common alteration methods without any noticeable traces
- Performed **penetration testing** on leading facial recognition systems using **DeepFake** technology, identifying vulnerabilities through **adversarial perturbation** in real-time environments

### National Olympiad in Informatics (NOI) Trainer, Ripplecreate [\[Slide\]](#)

Nov 2021 - Feb 2022

- Coached a 6-day NOI workshop for 21 high school representatives, achieving 1 Silver medalist and 4 Bronze medalists out of over 500 total participants

### Software Engineering Intern, National University of Singapore (NUS) [\[Demo\]](#)

May 2020 - Dec 2020

- Integrated an achievement system into the online learning platform through agile software methodologies and rapid prototyping
- Enhanced UI/UX and applied gamification principles, improving the learning experience for 1000+ cohort students
- Won the NUS Annual Digital Education Award (ADEA) 2021 award

### Teaching Assistant, CS1101S Programming Methodology, National University of Singapore (NUS)

Aug 2018 - Dec 2019

- Promoted to Senior Tutor with a high feedback score of 4.8/5.0

## COMPETITION EXPERIENCE

- Malaysian Computing Challenge (MCC) 2017 Gold Medalist
- Malaysian Computing Olympiad (MCO) 2017 Silver Medalist
- National Olympiad in Informatics (NOI) 2017 Bronze Medalist

## ACADEMIC PROJECTS

### NLP Contribution Graph [\[Report\]](#)

Sep 2021 - Oct 2021

- Extracted key information from research papers using an ensemble of Transformer models (BERT, SciBERT, BiLSTM, etc.)

## EXTRA-CURRICULAR ACTIVITIES

### President, Freshmen Orientation Camp, NUS AMCISA

May 2019 - Jul 2019

- Led a committee of 15 members to hold an 8-day NUS freshmen camp, supervised event execution and logistics planning

## ADDITIONAL INFORMATION

- Programming Languages: Python, C++, Java, TypeScript, JavaScript, Bash, SQL, PostgreSQL
- Skills: Artificial Intelligence (PyTorch, LangChain, HuggingFace, StableDiffusion, Numpy, OpenCV, NLTK), Web (Node.js, Next.js, ReactJS, Redux, Gatsby, AWS, FastAPI), SDLC (Git, Docker, Travis, Jenkins, GitHub Action, Pytest), Linux, MacOS
- Languages: English, Mandarin, Cantonese, Malay