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EDUCATION

Hong Kong · The Hong Kong Polytechnic University, **BSc (Hons) Information Security** *(graduate May 2026)*

PROFESSIONAL SUMMARY

- Final-year Information Security student with hands-on experience in **machine learning**, **computer vision**, **cybersecurity**, **and real-time system engineering**.
- Strong in **ML pipeline design**, **reproducible experiments**, **model deployment**, **and low-latency inference optimization.**
- Served as the **technical backbone** in multiple research and engineering projects, including real-time FER systems and deep learning–based phonology modeling.
- Experienced in **vulnerability remediation, STEM education,** and **full-stack development**.
- **Particularly strong in building real-time, human-centered systems that combine ML, XR, and cybersecurity principles.**

TECHNICAL SKILLS

- **Machine Learning / Computer Vision:**
  PyTorch · TensorFlow · ONNX Runtime · OpenCV · YuNet · CLAHE · MobileNetV3 · ResNet · EfficientNet · ConvNeXt · GANs (WGAN-GP, SpecGAN)
- **ML Engineering:**
  Dataset cleaning · Manifest validation · Reproducible pipelines · Calibration (NLL/ECE) · Temperature scaling · Multi-threaded inference · Real-time optimization
- **Cybersecurity:**
  Wireshark · Burp Suite · OWASP ZAP · Secure headers · Rate limiting · Vulnerability remediation
- **Programming:**
  Python · Java · C++ · JavaScript · PHP · JSP · XML · CGI
- **XR / Immersive Technology:**
  Unity · 360° Video Capture (Insta360) · 3D Reconstruction (LumaAI / Photogrammetry) · Interaction Design · VR/AR Prototyping
- **Tools:**
  GitHub · Linux · VMware · MySQL · Adobe

KEY PROJECTS

Real-Time Facial Expression Recognition System
[PyTorch, OpenCV, ONNX, MobileNetV3, YuNet, CLAHE, DKD]

- Engineered a **7-class FER pipeline** (ResNet18 / EfficientNetB3 / ConvNeXt / ViT ensemble + ArcFace) boosting minority-class recognition (Disgust, Fear, Sad).
- Designed and integrated **class-imbalance mitigation** and curriculum learning strategies, improving robustness across underrepresented categories.
- Built a **teacher–student distillation system** (RN18/B3/CNXT → MobileNetV3) achieving **Macro-F1 ≈ 0.79** and ~80% accuracy on multi-source validation.
- Integrated **YuNet face detection** and **CLAHE lighting normalisation** to reduce domain shift under webcam conditions.
- Developed a **multi-threaded real-time inference pipeline** (async capture → preprocessing → inference → smoothing) running at **25–30 FPS on CPU**.
- Implemented **temporal stabilisation** (EMA smoothing, hysteresis, voting window) to reduce flicker and improve user-perceived stability.
- Conducted **robustness analysis** on domain shift (lighting, pose, blur) and minority-class performance.
- Delivered a **fully reproducible ML pipeline**: dataset cleaning, manifest validation, teacher ensemble soft-label export, CE→KD→DKD student training.

Vowel Length Contrasts in Deep Learning: Generative Adversarial Phonology ***(Co-author, In Preparation)***
[TensorFlow, GANs, WGAN-GP, SpecGAN] ***Targeted for submission (Jan 2026)***

- Reengineered a legacy TF1 codebase into a modern **TF2 tf.keras** pipeline, improving reproducibility and stability.
- Implemented **WGAN-GP** loss and optimised upsampling layers, improving convergence and synthetic speech quality.
- Delivered a **SpecGAN-based system** capable of generating speech with controllable vowel length contrasts.
- Technical contributor to work presented at the **UC Berkeley Annual Phonology Meeting (2025)**.

Immersive Elderly Engagement System: 360° Virtual Walk + 3D Reconstruction
[Unity, Insta360, LumaAI, Photogrammetry, Interaction Design]

- Designed and deployed an immersive digital experience for underprivileged elderly residents in Yunnan, combining 360° virtual walks with **high-fidelity 3D reconstruction** of familiar environments.
- Captured and processed 360° footage of culturally significant locations using Insta360 and drone imaging, enabling seniors—many of whom had never left their hometown—to virtually explore new places.
- Reconstructed detailed 3D models of the elderly center using **LumaAI** photogrammetry, creating a realistic, emotionally resonant environment beyond simple video playback.
- Built an interactive Unity-based application with **Joy-Con motion controls**, allowing seniors to "walk," navigate, and engage with the virtual world intuitively.
- Conducted on-site deployment and user testing, observing increased emotional engagement, nostalgia, and social interaction among participants.
- Delivered a technology-driven social impact project blending **XR**, **accessibility design**, and **community service**, demonstrating how immersive tech can support well-being, memory, and digital inclusion.
- Inspired by digital inclusion and elderly well-being, aiming to help seniors experience places they have never been able to visit.

Other Project

Online Voting System	Library Management System	ATM Management System
E Commerce Platform	Restaurant Web Page Design	Company Database Design

WORK EXPERIENCE

STEM & Education Manager — Sky Dream / H.K.S.K.H *(Feb2025 - present)*

- Taught full-form classes of Secondary 3 students on **AI fundamentals, machine learning concepts, critical thinking, and coding**, bridging complex ideas into accessible learning.
- Delivered hands-on STEM workshops using **Arduino IoT** (lighting, sound, distance, temperature, IR sensors, airport simulation models).
- Designed age-appropriate STEM curricula and transformed engineering concepts into **interactive, inquiry-based learning experiences**.
- Mentored students with diverse learning abilities, improving engagement and confidence in technology subjects.
- Collaborated with teachers to align STEM activities with **youth development and community education goals**.

Program Delivery Intern — DHL EXPRESS HK *(Jun–Sep 2025)*

- Resolved 12 medium–to–high severity vulnerabilities across mission critical logistics applications (Flight Information, Co loader Track & Trace, Waybill Printing), improving security and operational reliability.
- Strengthened application security by implementing updated encryption, CSP fixes, Referrer Policy, SameSite cookies, authenticated endpoints, and rate limiting to mitigate XSS, CSRF, brute force, and data leakage risks.
- Reproduced vulnerabilities in a controlled test environment, validated fixes, and collaborated with cross regional teams (HK–Malaysia) for secure production deployment.
- Designed and executed a simulated phishing campaign, generating targeted training insights for high-risk employee groups.
- Developed engagement materials for Information Security & Data Protection (ISDP) Week, boosting staff participation and cybersecurity awareness.
- Co organized AI focused "Lunch & Learn" sessions for 80+ employees, demonstrating practical AI workflows and promoting tech adoption across departments.

IT Support Intern — Technology Solution *(May–Aug 2024)*

- Provided IT support services across **four client companies**, resolving daily technical issues in fast-paced business environments.
- Diagnosed and fixed hardware/software problems, including **PC failures, network outages, Wi-Fi issues, and system configuration errors**.
- Assisted non-technical staff with **Excel, email, and software usage**, improving productivity and reducing downtime.
- Set up and maintained office IT infrastructure, ensuring stable operations and quick recovery during incidents.
- Acted as the first-line technical contact for client employees, strengthening communication and problem-solving skills.

Customer Service Roles *(2020–2023)*

- Developed effective communication, problem-solving, and teamwork skills in high-paced environments.