

Tony Ng

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WORK EXPERIENCE

AI RESEARCH SCIENTIST	Meta London	AUG 2024 - Present
	<ul style="list-style-type: none">Image, video & audio diffusion models to optimize ad performance across Meta platforms.Data curation pipelines from pretraining (millions of images/videos) to post-training (thousands of high-quality data, using rewards models / human selection).Developed and implemented evaluation guidelines for assessing generation quality, covering aspects from defects to aesthetics, and successfully deployed these at scale with annotators.Boosted advertiser adoption by 40% on a \$1M+ daily revenue stream by training and deploying an image generation model.	
RESEARCH ENGINEER	Synthesia London	FEB 2023 - AUG 2024
	<ul style="list-style-type: none">Controllable video diffusion models for AI dubbing on avatars.End-to-end research & development and deployment of <i>AvatarBuilder</i> (link to announcement) in Synthesia STUDIO for customising avatars with Gen AI.System design, engineering and deployment for AI Video Generation technology at scale.	
RESEARCH INTERN	Meta London	JUN 2022 - OCT 2022
	<ul style="list-style-type: none">Led a research agenda in the SceneScript project on multimodal understanding between text and 3D, specifically using LLMs that generates scene elements via auto-regressive Transformers.Created an API for internal AR/VR research, including a demo of the scene generation pipeline.	
	Facebook Redmond, WA	MAY 2021 - NOV 2021
	<ul style="list-style-type: none">Led the CVPR'22 research on privacy-preserving ML using adversarial learning at Reality Labs.Produced research code compatible with the Facebook (now Meta) infrastructure.	
TEACHING ASSISTANT	Imperial College London London	OCT 2018 - AUG 2023
	<ul style="list-style-type: none"><u>Courses</u>: Machine Learning (Year 3), Pattern Recognition (Year 4), Deep Learning (Year 4)<u>Responsibilities</u>: Marking and giving feedback for exams & courseworks, giving tutorials.	
VISITING STUDENT	Scape Technologies London	JUN 2019 - DEC 2019
	<ul style="list-style-type: none">Job-shadowed Dr. Vassileios Balntas and his research team.Assisted the integration of image retrieval modules into Scape's localization pipeline.	
SUMMER INTERN	Rolls-Royce plc Derby, UK	JUN 2016 - SEP 2016
	<ul style="list-style-type: none">Set up and managed a project team of 7 specialists to resolve a disruption issue within the supply chain, with impact of approximately £120K and duration of 10 months.Analysed a spreadsheet with over 650,000 entries to assess replacement risks and costs.	

EDUCATION

PHD	Electrical and Electronic Engineering Imperial College London	SEP 2018 - AUG 2023
	<ul style="list-style-type: none"><u>Research Topic</u>: Visual localization for AR/VR using deep-learning and geometry.<u>Supervisor</u>: Prof. Krystian Mikolajczyk, <u>Co-supervisor</u>: Dr. Vassileios Balntas.<u>Scholarship</u>: Departmental Scholarship for Overseas PhD Candidates.	
MEng	Aeronautical Engineering Imperial College London	OCT 2014 - JUN 2018
	<ul style="list-style-type: none"><u>Thesis</u>: "<i>Prediction Model for Gravity Currents.</i>" Grade: 80/100.<u>Classification</u>: First Class Honours (1:1), Average Score 78%.<u>Awards</u>: Dean's List 2015 & 2016, Aeronautics Scholars.	

PUBLICATIONS

- 2022** T. Ng, H.J. Kim, V. Lee, D. DeTone, T. Yang, T. Shen, E. Ilg, V. Balntas, K. Mikolajczyk, C. Sweeney. **NinjaDesc: Content-Concealing Visual Descriptors via Adversarial Learning.** In *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2022.
- T. Ng, A. Lopez-Rodriguez, V. Balntas, K. Mikolajczyk. **OoD-Pose: Camera Pose Regression from Out-of-Distribution Synthetic Views.** In *International Conference on 3D Vision (3DV)*, 2022.
- 2020** T. Ng, V. Balntas, Y. Tian, K. Mikolajczyk. **SOLAR: Second-Order Loss and Attention for Image Retrieval.** In *Proceedings of the 16th European Conference on Computer Vision (ECCV)*, 2020.
- Y. Tian, A. Barroso-Laguna, T. Ng, V. Balntas, K. Mikolajczyk. **HyNet: Learning Local Descriptor with Hybrid Similarity Measure and Triplet Loss.** In *Proceedings of Advances in Neural Information Processing Systems (NeurIPS)*, 2020.
- Y. Tian, V. Balntas, T. Ng, A. Barroso-Laguna, Y. Demiris, K. Mikolajczyk. **D2D: Keypoint Extraction with Describe to Detect Approach.** In *Asian Conference on Computer Vision*, 2020.
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CONFERENCES

- REVIEWER** **CVPR 2023:** [Outstanding Reviewer](#).
CVPR2025, ICLR 2022, CVPR 2022 & ECCV 2022.
NeurIPS 2021 & 2022: [Outstanding Reviewer Award](#): awarded to the top 8% of reviewers in 2021.
- ECCV 2020** **Author & Reviewer** AUG 2020
· As a first author, prepared [short](#) and [long](#) videos for two poster sessions.
· Paper and interview featured in [ECCV daily](#).
- CVPR 2020** **Invited Speaker at Image Matching Challenge 2020** JUN 2020
· Lead presenter of a [top entry](#) at the challenge in [Image Matching: Local Features and Beyond](#).
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LEADERSHIP & VOLUNTEERING

- LEADER, SINGER, ARRANGER** **The Mockingbird** | London OCT 2014 - MAR 2017
· A London-based Acapella group, founded by students / music enthusiasts from Hong Kong.
· We held annual concerts in March every year with attendances in the hundreds.
· I was mainly a bass singer, but also a song-arranger, choreographer, stage-designer, concert organiser, as well as being one of the leading figures in my third and final year with the group.
- ASSOCIATE** **Imperial College Consultancy Society** | London OCT 2016 - MAY 2017
· Hosting and preparing materials for weekly case-study sessions with the Case-Study Group.
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SKILLS & INTERESTS

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| COMPUTING | High Proficiency <ul style="list-style-type: none">· Python, PyTorch· Docker, k8s / kubeflow | Medium Proficiency <ul style="list-style-type: none">· CI/CD (e.g. gha, terraform)· C++ | Basic Proficiency <ul style="list-style-type: none">· JavaScript· Unix |
| LANGUAGE | Native / Fluent <ul style="list-style-type: none">· English· Cantonese, Mandarin | Conversational <ul style="list-style-type: none">· Korean | Basic <ul style="list-style-type: none">· German (B1+)· Japanese |
| INTERESTS | <ul style="list-style-type: none">· Singing, Travelling· Lifting weights, Tennis· Formula 1· Age of Empires II | | |