

MATTHEW PEIZHI YAN

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EDUCATION

- **The University of British Columbia** (2021 - Present)
Vancouver, British Columbia, Canada — **Ph.D. Candidate** in *Electrical and Computer Engineering*
Supervisors: Dr. Rabab Ward, Dr. Shan Du
Thesis: Learning-based 3D Human Face Creation
GPA: 4.0 / 4.0 (Average Grade: 95%, Letter: A+)
- **Lakehead University** (2018 – 2020)
Thunder Bay, Ontario, Canada — **M.Sc.** in *Computer Science*
Supervisor: Dr. Salimur Choudhury
Thesis: Towards Machine Learning Enabled Future-Generation Wireless Network Optimization
GPA: 4.0 / 4.0 (Average Grade: 98%, Letter: A+)
Distinction: **Governor-General's Gold Medal**
- **Algoma University** (2016 – 2018)
Sault Ste. Marie, Ontario, Canada — **B.Sc.** in *Computer Science*
Supervisors: Dr. Yi Feng, Dr. George Townsend
GPA: 4.0 / 4.0 (Average Grade: 96%, Letter: A+)
- **University of Jinan** (2014 – 2019)
Jinan, Shandong, China — **B.Eng.** in *Computer Science*

RESEARCH AND WORK EXPERIENCE

The University of British Columbia

- **Research Assistant** (Jan. 2021 – Present)

BC Cancer Research Centre

- **Research Assistant** (Jun. 2024 – Oct. 2024)

Huawei Canada

- **Research Internship** (Sep. 2021 – May 2022)

Lakehead University

- **Research Assistant** (Sep. 2018 – May 2020)
- **Graduate Teaching Assistant** (Sep. 2018 – May 2020)

Algoma University

- **Research Assistant at BCI Lab** (2017 - 2018)

TEACHING EXPERIENCE

Lakehead University

- **Guest Lecturer (9 hours):** *Optimization Method* (2020 Spring), graduate-level course, 29 students
- **Guest Lecturer (6 hours):** *Deep Learning* (2020 Winter), graduate-level course, 83 students
- **Guest Lecturer (6 hours):** *Computer Vision* (2019 Fall), graduate-level course, 70 students
- **Guest Lecturer (9 hours):** *Deep Learning* (2019 Spring), graduate-level course, 59 students
- **Guest Lecturer (6 hours):** *Optimization Method* (2019 Spring), graduate-level course, 19 students

- **Tutor:** *Assembly Language (2019 Winter)*, undergraduate-level course, 38 students
- **Tutor:** *Data Base Management Systems (2018 Fall)*, undergraduate-level course, 25 students

ACADEMIC SERVICE

Journal Reviewer

- **Elsevier** *Neurocomputing* (13 reviews)
- **Springer** *Neural Computing and Applications* (1 review)
- **IEEE** *Transactions on Cybernetics* (1 review)
- **IEEE** *Transactions on Circuits and Systems for Video Technology* (13 reviews)
- **IEEE** *Canadian Journal of Electrical and Computer Engineering* (4 reviews)
- **IEEE** *Access* (1 review)

Conference Reviewer

- 2022 Asian Conference on Computer Vision (**ACCV**)
- 2021 to 2023 IEEE International Conference on Image Processing (**ICIP**)
- 2020 The 17th IEEE International Conference on Ubiquitous Intelligence and Computing

Other

- **Guest Speaker** at Consortium for Advancement of MRI Education and Research in Africa (2023)
- **Invited Talk** on Machine Learning in 3D Face Modeling for UBC (Okanagan) CS Dept. (2023)
- **Vice President** of Turing Computer Association (S/W Dept.), Univ. of Jinan, China (2015-2016)

PUBLICATIONS

Citations: 147 h-index: 8 i10-index: 6 (statistics are from Google Scholar)

Journal

1. Liu, W., Hopkins, A. M., **Yan, P.**, Du, S., Luyt, L. G., Li, Y., & Hou, J. (2023), "Can Machine Learning 'Transform' Peptides/Peptidomimetics into Small Molecules? A Case Study with Ghrelin Receptor Ligands", *Molecular Diversity*, 1-17. (SCI Journal, IF: 3.364)
2. **Yan, P.**, & Choudhury, S. (2021), "Deep Q-Learning Enabled Joint Optimization of Mobile Edge Computing Multi-Level Task Offloading", *Elsevier Computer Communications*. (SCI Journal, IF: 3.923)
3. **Yan, P.**^c, Paul, A.^c, Yang, Y., Zhang, H., Du, S. & Wu, J. (2021), "Non-Iterative Online Sequential Learning Strategy for Autoencoder and Classifier", *Springer Neural Computing and Applications*. (SCI Journal, IF: 6.106)
4. Tassone, J., **Yan, P.**, Simpson, M., Mendhe, C., Mago, V., & Choudhury, S. (2020), "Utilizing Deep Learning and Graph Mining to Identify Drug Use on Twitter Data". *BMC Medical Informatics and Decision Making*, 20(11), 1-15. (SCI Journal, IF: 3.546)
5. **Yan, P.**, Al-Turjman, F., Al-Oqily, I., & Choudhury, S. (2020), "An Energy-Efficient Topology Control Algorithm for Optimizing the Lifetime of Wireless Ad-hoc IoT Networks in 5G and B5G". *Computer Communications*. Elsevier. (SCI Journal, IF: 3.923)
6. **Yan, P.**, Choudhury, S., & Wei, R. (2020), "A Machine Learning Auxiliary Approach for the Distributed Dense RFID Readers Arrangement Algorithm". *Intelligent and Cognitive Techniques for Internet of Things, IEEE Access Journal*. (SCI Journal, IF: 5.456)
7. **Yan, P.**, & Feng, Y. (2018), "Using Convolution and Deep Learning in Gomoku Game Artificial Intelligence". *Modern Physics Letters A*, 28(03). (SCI Journal, IF: 1.367)

Conference

8. **Yan, P.**, Ward, R., Tang, Q., & Du, S., "Gaussian Deja-vu: Creating Controllable 3D Gaussian Head Avatars with Enhanced Generalization and Personalization Abilities". Accepted by *IEEE/CVF Winter Conference on Applications of Computer Vision (WACV)*. 2025. (**Accepted in Round 1, acceptance rate of 12%**)
9. Qiu, Z., **Yan, P.**, & Cai, Z., "Large Language Models for Second Language English Writing Assessments: An Exploratory Comparison". Accepted by the *38th Pacific Asia Conference on Language, Information and Computation (PACLIC 38)*. 2024.
10. **Yan, P.***, Ward, R., Wang, D., Tang, Q., & Du, S., "Learning Disentangled Features for NeRF-based Face Reconstruction". In *Proceedings of the International Conference on Image Processing (ICIP)*. 2023.

11. **Yan, P.***, Gregson, J., Tang, Q., Ward, R., Xu, Z., & Du, S. "NEO-3DF: Novel Editing-Oriented 3D Face Creation and Reconstruction". In *Proceedings of the Asian Conference on Computer Vision (ACCV)*. 2022.
12. Mehajabin, N., **Yan, P.**, Kaur, S., Song, J., Pourazad, M. T., Wang, Y., ... & Nasiopoulos, P. An Efficient Refocusing Scheme for Camera-Array Captured Light Field Video for Improved Visual Immersiveness. In *Proceedings of the 55th Hawaii International Conference on System Sciences*. 2022
13. **Yan, P.***, & Choudhury, S., "Optimizing Mobile Edge Computing Multi-Level Task Offloading via Deep Reinforcement Learning". In *Proceedings of the ICC 2020-2020 IEEE International Conference on Communications (ICC)*. IEEE. 2020.
14. Emu, M., **Yan, P.***, Choudhury, S., "Latency Aware VNF Deployment at Edge Devices for IoT Services: An Artificial Neural Network Based Approach". In *Proceedings of the ICC 2020-2020 IEEE International Conference on Communications (ICC) on Convergent IoT*. IEEE. 2020
15. **Yan, P.***, Choudhury, S., & Wei, R. "A Distributed Graph-Based Dense RFID Readers Arrangement Algorithm". In *Proceedings of the ICC 2019-2019 IEEE International Conference on Communications (ICC)* (pp. 1-6). IEEE. May, 2019.
16. **Yan, P.***, & Feng, Y. "A Hybrid Gomoku Deep Learning Artificial Intelligence". In *Proceedings of the 2018 Artificial Intelligence and Cloud Computing Conference* (pp. 48-52). ACM. December, 2018.

* indicates the presenter.

^c indicates co-first authorship.

AWARDS AND HONORS

Canada

- (2020) **The Governor-General's Gold Medal Award** (Canada's highest award in graduate level)
- (2018) **Vector Scholarship in Artificial Intelligence (VSAI)** by Vector Institute, \$17,500

University of British Columbia

- (2023) ICICS Travel Award
- (2021, 2022, 2023) Graduate Support Initiative (GSI) Award

PROJECTS

Research-Oriented

- (2024) **Gaussian Deja-vu**: 3DGS-based 3D Head Creation
- (2024) Mesh-based Neural 3D Face Style Transfer (<https://peizhiyan.github.io/docs/style>)
- (2023) **StyleMorpheus**: NeRF-based 3D Face (<https://github.com/ubc-3d-vision-lab/StyleMorpheus>)
- (2022) **NEO-3DF**: 3D Face Creation and Editing (<https://peizhiyan.github.io/docs/neo3df>)
- (2019) Deep Learning 4X **Video Super-Resolution** (<https://www.youtube.com/watch?v=W8TxAPylE0Y>)

Other Open-Source Projects

- (2024) **3D Face Reconstruction** and Video 3D Face **Tracking** (<https://github.com/PeizhiYan/flame-head-tracker>)
- (2021) **ZenFlow** Open-Source Machine Learning Demo (<https://github.com/PeizhiYan/zenflow>)
- (2021) Light-Field Refocusing Algorithm User Interface (<https://www.youtube.com/watch?v=pRxXQcuVQs&t=9s>)
- (2019) Open-Source **Whiteboard Web App**. (<https://peizhiyan.github.io/www/draw.html>)
- (2018) Convolution-Based **Gomoku Game AI** (https://peizhiyan.github.io/js_codes/gomoku)

SUPERVISED STUDENTS

- **Xiangrui Liu** (master's student at UBC Okanagan, research assistant, May – Aug. 2023)
Project: 3D and 3D-aware face modeling.
- **Md Nafis Abedin** (undergraduate student at University of Waterloo, co-op 2020 summer intern)
Project: Developing an interactive web user interface for the satellite image lichen mapping project.

MENTORED STUDENTS

- **Keizo Kato** (undergraduate student at UBC Okanagan, 2023) on his undergraduate thesis.
- **Wenqi Guo** (undergraduate student at UBC Okanagan, 2023) on his undergraduate thesis.

RESEARCH EXPERTISE

- **Computer Vision and Graphics:** Super Resolution, StyleGAN, NeRF, 3D Gaussian Splatting
- **Machine Learning:** CNN, Graph Convolutional Networks, Reinforcement Learning

TECHNICAL SKILLS

- **Programming Languages:** Python, Java, C++, C, JavaScript
- **Open-Source Libraries:** PyTorch, Tensorflow, Keras, Open3D, OpenCV, Gurobi, Paper.js, React
- **Others:** LaTeX, Linux, SLURM (HPC), Photoshop, Blender

OPEN-SOURCE PROJECTS CONTRIBUTIONS

- **Simple-KNN:** Solved a CUDA device-related issue (PR accepted).
<https://github.com/camenduru/simple-knn>
- **Google-Mediapipe:** Solved a problem of loading model weights in Windows (PR submitted).
<https://github.com/google-ai-edge/mediapipe>

Updated on Nov. 09, 2024