

Bobae Jeon

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Summary — Computer graphics researcher with a strong background in computer vision and generative AI, specializing in video and image synthesis. My research focuses on generative models, including GANs, diffusion models, and VAEs, with particular expertise in face generation and reenactment. I led the development of a visual dubbing pipeline centered around a StyleGAN-inspired autoencoder, integrating state-of-the-art models. This work, conducted in collaboration with academic and industry partners during a research internship at AudioZ, successfully resulted in a conference paper accepted at Eurographics 2025. I bring deep experience in building and integrating generative pipelines, with strong coding skills in Python, C++, Java, PyTorch, and TensorFlow. My focus is on transforming cutting-edge research into reliable, high-quality visual content generation systems.

Skills

Machine Learning Libraries: PyTorch, TensorFlow, OpenCV, Scikit-learn

Languages: Python, Java, C++, C, JavaScript

Cloud: AWS (SageMaker, S3, EC2)

Virtualization: Docker

OS: Ubuntu, MacOS, Windows

Database: MySQL, Firebase

Version Control: GitHub

Experience

Concordia University, Montreal, QC, CAN

Sep 2022 – May 2025

Graduate Research Assistant (Full-time)

- Developed a visual dubbing pipeline to sync mouth expressions with a translated script
- Designed a modular framework incorporating 3D face reconstruction, StyleGAN-based autoencoder, and super-resolution
- Integrated state-of-the-art techniques for natural and high-quality results with minimal data (less than 10s)
- Focused on industry-level applications, particularly TV ads, ensuring seamless viewing experience

Teaching Assistant (Part-time)

Jan 2023 – Dec 2024

- Tutor, Lab Demonstrator & Marker for Program and Problem Solving – Taught data structures and problem-solving in Java, emphasizing memory and time efficiency through interactive sessions and hands-on labs. Also assessed student work and provided feedback
- Lab Demonstrator for Object-Oriented Programming – Guided students through practical coding exercises using Java
- Marker for Probability and Statistics and Mathematics for Computer Science – Evaluated assignments and provided feedback

AudioZ, Montreal, QC, CAN

Sep 2022 – May 2024

Research Intern (Full-time)

- Deployed the visual dubbing pipeline on AWS SageMaker through Dockerization, enabling direct use by the company
- Bridged research and production, tailoring the system to meet client needs
- Demonstrated strong software engineering skills, ensuring ease of use

Gugak Broadcasting Foundation, Seoul, KOR

Aug 2021 – Dec 2021

Intern (Full-time)

- Assisted in implementing an open data API
- Edited and processed sound effect data to be distributed into an API

Education

Concordia University, Montreal, QC, CAN

Sep 2022 – May 2025

Master's degree in Computer Science (Thesis)

Research student @ 3D Graphics Lab under the supervision of Dr. Sudhir Mudur and Dr. Tiberiu Popa

Soongsil University, Seoul, KOR

Mar 2017 – Aug 2021

Bachelor's degree in Computer Science and Engineering / Economics; Double majored

Publications

Jeon, Bobae, Eric Paquette, Sudhir Mudur, and Tiberiu Popa. "Personalized Visual Dubbing through Virtual Dubber and Full Head Reenactment" In Eurographics (Short Papers). 2025. (presented)

Honors

Open Data Competition 2021, Ministry of the Interior and Safety, KOR	Dec 2021
<i>Top prize — Competition for open data-driven web/mobile application developments</i>	
Open Data Application Competition 2022, Daejeon, KOR	Aug 2022
<i>Accepted — Competition for open data-driven web/mobile application developments</i>	
Concordia Split Merit Scholarship	Fall 2022

Projects

Visual Dubbing Research	Sep 2022 – May 2025
<i>Computer vision & graphics research</i>	
<ul style="list-style-type: none">– Developed high-fidelity face synthesis pipeline under few-shot constraints– Researched person-specific visual dubbing using a modular pipeline– Benchmarked SOTA generative models (GANs, Diffusion, VAEs)– Evaluated trade-offs between model fidelity, generalization, and data efficiency for real-world applications in visual dubbing– Skills used: PyTorch, AWS, generative models	
Learning Assistant App	May 2022 – Aug 2022
<i>Android development</i>	
<ul style="list-style-type: none">– Participated in Open Data Application Competition 2022– Built an Android mobile app for learning assistant, providing open data roadmaps for users to follow– Services provided: providing roadmaps, diary features– Responsible for data preprocessing and Android development– Skills used: Android Studio, Java, Firebase	
Volunteer Program Helper App	Nov 2021 – Jun 2022
<i>Android development</i>	
<ul style="list-style-type: none">– Participated in Open Data Application Competition 2021– Built an Android mobile app for a volunteer program, taking care of street trees in Seoul, South Korea– Services provided: signing up for the program, changing tree images by submitting volunteer work reports, showing information about street trees– Responsible for database design and Android development– Skills used: Android Studio, Java, Firebase	
AI Trainer Program	Jul 2021 – Oct 2021
<i>Computer vision application development</i>	
<ul style="list-style-type: none">– Using MediaPipe, estimate human pose and analyze the forms while doing exercises– Fields related: Human pose estimation, angle-calculation between joint– Skills used: Python, OpenCV, MediaPipe	