Chenyang Xu

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Education

New York University, Courant Institute of Mathematical Sciences — New York, USA
M.S. in Computer Science — GPA 3.9 / 4.0 — *Jan. 2024 – Dec. 2025*

- Coursework focus: Computer Vision, Geometric Processing, Computer Graphics.

University of Cambridge, St John's College — Cambridge, UK
Combined B.A. & M.Eng. in Engineering (Information Engineering) — *Oct. 2017 – Jun. 2021*

- Year 1–2 General Engineering: mechanical engineering, electrical & electronic engineering, materials, information engineering.
- Year 3–4 Information Engineering: control, information theory, reinforcement learning.

Publications & Research

[*] equal contribution (co-first author) · [†] equal contribution (co-second author) · [✉] corresponding author

Night at the Museum: A Scalable Framework for Text-Driven Mesh Motion Generation *Sep. 2025 – May 2026*

Under Review · *First Author* · AI4CE Lab, NYU (Prof. Chen Feng)

- Designed a two-stage framework for text-driven animal mesh motion generation — no predefined skeletons, joint names, or manual rigging.
- Proposed *Semantic Gaussian Bones* (SGBs), a compact skeleton-free deformation representation decoded from a globally shared learnable query book and trained via explicit linear blend skinning with topology-aware mask-gated weights.
- Built a DiT-based animal mesh motion diffusion model that generates per-SGB SE(3) trajectories from text, with SGB-slot clamping for partial-body motion inpainting; improved overall motion quality over skeleton- and vertex-based baselines on the out-of-domain AnimalML3D benchmark.

FEM Solver Benchmark *Feb. 2025 – Present*

In Progress · *First Author* · Geometric Computing Lab, NYU (Profs. D. Zorin, T. Schneider, D. Panozzo)

- Conducting systematic benchmarks of finite element method (FEM) solvers; optimizing the performance of PolySolve linear solvers.

Crag: Can 3D Generative Models Help 3D Assembly? *Apr. – Sep. 2025*

ICML 2026 · Zeyu Jiang[*], Sihang Li[*], Siqi Tan[†], **Chenyang Xu**[†], Juexiao Zhang, Julia Galway-Witham, Xue Wang, Scott A. Williams, Radu Iovita, Chen Feng[✉], Jing Zhang[✉]

- Designed a physically based simulation pipeline modeling the fossilization process of bones to curate a new dataset.
- Implemented FractureBEM for modeling brittle fracture behavior.

GARF: Learning Generalizable 3D Reassembly for Real-World Fractures *Jan. – Apr. 2025*

ICCV 2025 · Sihang Li[*], Zeyu Jiang[*], Grace Chen[†], **Chenyang Xu**[†], Siqi Tan, Xue Wang, Irving Fang, Kristof Zyskowski, Shannon McPherron, Radu Iovita, Chen Feng[✉], Jing Zhang[✉]

- Designed a generalizable flow-matching-based 3D reassembly method trained on 1.9 M fractures, enabling precise real-world fragment pose alignment.

Linear Gaussian Model Hyper-Parameter Optimization in Successor Uncertainties *Aug. 2020 – Jun. 2021*

Computational and Biological Learning Lab, University of Cambridge (Prof. José Miguel Hernández-Lobato, Dr. David Janz)

- Applied the Bayesian linear model to improve Successor Uncertainties (SU), a state-of-the-art method for efficient exploration in model-free reinforcement learning.

Improvement of an OFDM Audio Modem *Apr. 2020*

University of Cambridge (Prof. Jossy Sayir)

- Explored improvements to an OFDM-based audio modem; resolved linear-phase addition issues introduced by OFDM block truncation and analyzed them mathematically.

Appointments & Industry Experience

AI4CE Lab, NYU — New York, USA
Research Assistant — *Apr. 2026 – Present*

Wayve — London, UK
Software Engineering Summer Intern, Autonomous Driving — *Jul. 2019 – Aug. 2019*

- Built a fleet monitoring system supervising autonomous-driving vehicle status (GPS, telemetry, etc.); became a tool for downstream fleet data analysis.

Deckzero — London, UK
Software Engineering Summer Intern — *Jun. 2018 – Sep. 2018*

- Built the prototype of an education web tool transforming self-learning materials (e.g. Jupyter notebooks) into presentable slides.

Technical Skills

Python, C++, JavaScript, HTML/CSS, MATLAB, Blender, Unity, Linux

Honors & Awards

Silver Medal, British Physics Olympiad (BPhO) Final Round — top 50 nationally (2017)
Gold Medal, Cambridge Chemistry Challenge (C3L6) Final Round (2016)

Activities

Gamecores Booom Game Jam — China
Team Leader & Lead Programmer — Twelve Terrestrial Branches — *Aug. 2021*

- Built an action-RPG in Unity in which two players solve linked tasks in their own worlds; the two worlds share a hidden relationship that gradually reveals a mystery story. [link]

Cambridge University Chinese Debating Society — Cambridge, UK
Publicity Officer — *Apr. 2018 – Apr. 2019*

- Represented Cambridge at the 2019 International Chinese Debating Competition (*Xin Guo Bian*).
- Helped run the UK's largest inter-university Chinese debating conference (2019).