

Xiaodan Du

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EDUCATION

Ph.D. in Computer Science

Toyota Technological Institute at Chicago

Expected: Jul. 2027

GPA: 3.96/4.00

Master of Science in Computer Science (within Ph.D. program)

Toyota Technological Institute at Chicago

Sep. 2022

Master of Science in Computer Science

University of Illinois Urbana-Champaign

May 2020

GPA: 4.00/4.00

Bachelor of Science in Civil Engineering, with High Honors

University of Illinois Urbana-Champaign

May 2018

Minor in Computer Science

GPA: 3.96/4.00

PAPERS

Teaching an Agent to Sketch One Part at a Time

Xiaodan Du*, Ruize Xu*, David Yunis*, Yael Vinker, Greg Shakhnarovich

ECCV, 2026

SHuBERT: Self-Supervised Sign Language Representation Learning via Multi-Stream Cluster Prediction

Shester Gueuwou, Xiaodan Du, Greg Shakhnarovich, Karen Livescu, Alexander H. Liu

ACL, 2025

SignMusketeers: An Efficient Multi-Stream Approach for Sign Language Translation at Scale

Shester Gueuwou, Xiaodan Du, Greg Shakhnarovich, Karen Livescu

ACL, 2025

Generative Models: What do they know? Do they know things? Let's find out!

Xiaodan Du, Nicholas Kolkin, Greg Shakhnarovich, Anand Bhattad

CVPR Workshops, 2024

Score Jacobian Chaining: Lifting Pretrained 2D Diffusion Models for 3D Generation

Haochen Wang*, Xiaodan Du*, Jiahao Li*, Raymond A. Yeh, Greg Shakhnarovich

CVPR, 2023

(* indicates equal contribution)

Text-Free Learning of a Natural Language Interface for Pretrained Face Generators

Xiaodan Du, Raymond A. Yeh, Nicholas Kolkin, Eli Shechtman, Greg Shakhnarovich

arXiv preprint, 2022

PATENTS

US Patent 11093736, "Systems and methods for machine vision based object recognition"

Inventors: Ujjval Patel, Xiaodan Du, Lucas McDonald

Jan. 22, 2021

INTERNSHIPS

Machine Learning Research Intern, Computer Vision

Toyota Research Institute

Los Altos, CA

Jun. 2024 – Aug. 2024

- Train a large-scale action/video diffusion model on diverse robotics datasets for better action prediction accuracy

Research Scientist/Engineer Intern

Adobe Research

San Francisco, CA

Feb. 2023 – May 2023

- Proposed a method to do personalized scene reconstruction and stylization by jointly learning a radiance field representation of the scene and a ControlNet together
- Achieved better scene reconstruction quality than Instant-NGP by leveraging score-based model's prior knowledge to remove blurry artifacts
- Developed a new mechanism to stylize the scene during inference time without the need for finetuning

Machine Learning and Computer Vision Research Internship

Synchrony Financial

- Developed an online real-time customer tracking system using YOLOv3 deep neural network and Deep SORT algorithm for Synchrony's cashier-less store
- Proposed a card-less payment solution with real-time facial recognition
- Integrated computer vision and deep learning technologies to perform real-time multi-target multi-camera tracking

*Urbana-Champaign, IL
May 2019 – Aug. 2019*

OTHER PROJECTS

Self-Attention Generative Adversarial Networks for Video Generation

Advisor: Professor Svetlana Lazebnik

- Propose a novel self-attention-driven GANs framework for conditional video generation
- Extend the application of self-attention to video generation and prediction
- Visualize attention maps to prove effectiveness and usefulness of self-attention layers
- Use PyTorch platform to implement the proposed GANs framework

*Urbana-Champaign, IL
Jan. 2019 – May 2020*

Caption Aided Image Classifier for Unusual Images

Advisor: Professor Svetlana Lazebnik

- Trained a ResNet50 image classifier on a highly unbalanced "unusual" image dataset
- Created an RNN text classifier based on the image captions
- Integrated the two classifiers to perform combined classification

*Urbana-Champaign, IL
Aug. 2018 – Dec. 2018*

Computer Vision Based Recognition of Human-Object Interaction

Real-time and Automated Monitoring and Control Lab, Advisor: Professor Mani Golparvar-Fard

- Developed evaluation functions to evaluate trained models based on mean average precision
- Created a Python API that helps in loading and parsing the annotations
- Wrote scripts to transform annotations of HICO-DET dataset into JSON file

*Urbana-Champaign, IL
Sep. 2017 – May 2018*

Modeling of Tsunamis and Breaking Waves and their Impact on Built Infrastructure

National Center for Supercomputing Applications (NCSA), Advisor: Arif Masud

- Parallel simulation for CFD (computational fluid dynamics) and FSI (fluid-structure interaction) simulations on Blue Waters supercomputer
- Developed code for fast generation of signed distance field as initial conditions in immersed boundary or free-surface problems
- Presented at Undergraduate Research Symposium on "A Novel Way for Converting 3D images to Finite Element Models"

*Urbana-Champaign, IL
Aug. 2016 – May 2018*

PROFESSIONAL SERVICES

Journal/Conference Reviewer:

- NeurIPS
- BMVC
- ICLR
- WACV
- ECCV
- CVPR
- SIGGRAPH

*Sep. 2024
Apr. 2024*

Workshop Co-organizer:

- ECCV Workshop on "Knowledge in Generative Models"
- Toyota Research Institute Multi-University Workshop

Apr. 2024

Panelist:

- Toyota Research Institute Multi-University Workshop Student Panel

TEACHING EXPERIENCE

Teaching Assistant

TTIC31020: Introduction to Machine Learning

*Chicago, IL
Oct. 2022 – Dec. 2022*

- Developed and authored comprehensive assignments
- Conducted weekly tutorial sessions and held office hours
- Recipient of the “Outstanding Teaching Assistant Award”

Teaching Assistant

CS101: Introduction to Programming for Engineers and Scientists

- Hosted and helped improve lab sections throughout the semester
- Composed and reviewed new course materials ahead of time
- Held office hours every week

*Urbana-Champaign, IL
Aug. 2018 – May 2020*

Leadership

Structural Engineers Association - UIUC Chapter

President

- Invited engineers from structural design firms to present their recent projects to students
- Built connections between students and the industry
- Presented civil engineering knowledge to the public at Engineering Open House

*Urbana-Champaign, IL
Jan. 2015 – May 2018*

UIUC Civil China

Co-founder and Vice President

- Created connections between students and alumni to promote their career developments
- Negotiated with the Civil Engineering Department for co-hosting events on traditional Chinese holidays to enhance communication between Chinese and local students
- Lead public communication, planned event logistics, and raised funding

*Urbana-Champaign, IL
Jan. 2015 – May 2018*

HONORS

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|---|------------------|
| • Best Paper Runner-Up Award , AI for Content Creation Workshop at CVPR 2026 | <i>Jun. 2026</i> |
| • 2026 Student Workshop Best Talk Award , The Toyota Technological Institute at Chicago | <i>May 2026</i> |
| • 2025 Student Workshop Best Talk Award , The Toyota Technological Institute at Chicago | <i>May 2025</i> |
| • 2023 Outstanding TA Award , The Toyota Technological Institute at Chicago | <i>Sep. 2023</i> |
| • Bronze Tablet , awarded to the top 3% of the graduating class, University of Illinois Urbana-Champaign | <i>May 2018</i> |
| • Ira O. Baker Prize – First Prize , University of Illinois Urbana-Champaign | <i>Apr. 2018</i> |
| • Bowman, Barrett, and Associates Outstanding Scholar Award , University of Illinois Urbana-Champaign | <i>Apr. 2017</i> |
| • Wayne C. Teng Scholarship , University of Illinois Urbana-Champaign | <i>Apr. 2017</i> |
| • Concrete Reinforcing Steel Institute Scholarship , University of Illinois Urbana-Champaign | <i>Apr. 2016</i> |
| • Anna Lee and James T. P. Yao Scholarship , University of Illinois Urbana-Champaign | <i>May 2015</i> |