SHUHONG (SHU) CHEN

website: shuhongchen.github.io
email: shuhong@terpmail.umd.edu
github: ShuhongChen
google scholar: link
linkedin: link

EDUCATION

PhD in Computer Science
University of Maryland, College Park, MD
2024 (May graduation, expected)

Computer Vision / Graphics
Advisor: Prof. Matthias Zwicker, CS
Thesis: ML for NPR Illustration, Animation, and 3D Character Modeling

CVPR, ECCV, SIGGRAPH Asia, etc. top venue publication record, and collaboration with both big tech (Meta, TikTok) and Japan's anime industry (OLM Digital, Arch Inc.)

BS in CS and Math (+ Econ minor)
Rutgers University, New Brunswick, NJ
2019, Honors College, summa cum laude

ML for Healthcare Informatics
Advisor: Prof. Ivan Marsic, ECE
Thesis: Event Alignment for Medical Process Mining

An ICDM first-authorship and over a dozen co-authorship collaborations, spanning process mining, NLP, and CV for medical trauma resuscitations.

INDUSTRY EXPERIENCE

Meta, Research Scientist Intern
Mentors: Amit Kumar, Xiaoyu Xiang, Sreyas Mohan, Rakesh Ranjan
2023 August – 2024 March
Core AI Team - 3D Generation, ongoing work leveraging diffusion models to non-photorealistic 3D character reconstruction, animation, and editing.

TikTok/ByteDance, Research Scientist Intern
Mentors: Yiheng Zhu, Heng Wang, Yichun Shi
2022 May – 2022 November
Intelligent Creation & Computer Vision - Generation Team, worked on generative modeling of 3D VR character assets; specifically, stylized single-view 3D reconstruction from illustrated character portraits.

MIT Lincoln Laboratory, Vision/ML Research Intern
Advisor: Dr. Michael Chan
2018 June – 2018 August
I have applied deep state-of-the-art techniques to active problems in Computer Vision. Specifically, I have looked at automatically discovering recurrent neural network architectures for video action recognition. I was also a finalist at the lab's Intern Innovative Idea Challenge.

ANIME INDUSTRY EXPERIENCE

Sakuga Prototype, Founder
2024 January - present
Prototyping assistive tools for the Japanese anime pipeline (douga, shiage, etc.), using full-stack development (from ML training, to serving AWS backend, to designing drawing app front-end)

OLM Digital Inc., Research Collaborator
Supervisors: Maejima Akinobu, Marc Salvati, Tatsuo Yotsukura
2023 July - 2023 July
R&D Division, in-person in Setagaya, Tokyo. Worked on automatic cleanup of genga to douga. Saw the production process first-hand, and trained models on real production data.

Arch Inc., Visiting Researcher
Affiliate contact: Jun Kato
2023 January - present
Thanks to colleagues at Arch Inc. for setting me up as a visiting researcher, to help foster collaboration with anime industry professionals in Japan.

SELECTED PUBLICATIONS

full list on google scholar (30+ articles)

(**CVPR 2023**) **Chen Shuhong**, Zhang Kevin, Shi Yichun, Wang Heng, Zhu Yiheng, Song Guoxian, An Sizhe, Kristjansson Janus, Yang Xiao, & Zwicker Matthias. (2023). Stylized Single-view 3D Reconstruction from Portraits of Anime Characters.

(**ECCV 2022**) **Chen Shuhong**, & Zwicker Matthias. (2022). Improving the Perceptual Quality of 2D Animation Interpolation.

(**SIGGRAPH Asia 2022**) Hadadan Saeed, **Chen Shuhong**, & Zwicker Matthias. (2022). Neural Radiosity.

(**WACV 2022**) **Chen Shuhong**, & Zwicker Matthias. (2022). Transfer Learning for Pose Estimation of Illustrated Characters.

(**ICDM 2017**) **Chen Shuhong**, Yang Sen, Zhou Moliang, Burd Randall S., Marsic Ivan. "Process-oriented Iterative Multiple Alignment for Medical Process Mining." (2017): ICDM Workshop on Data Mining in Biomedical Informatics and Healthcare (DMBIH).

HONORS & AWARDS

2021 **Honorable Mention**, NSF Graduate Research Fellowship Program (graduate)
2019 **Honorable Mention**, NSF Graduate Research Fellowship Program (undergrad)
2019 **Dean's Fellowship**, UMD Graduate School of Computer Science
2019 **Startup Allocation**, XSEDE PSC Bridges
2018 **Alan Marc Schreiber Memorial Scholarship**, Rutgers SAS Excellence Award in Math
2017 **Grant for Conference Funding**, Aresty Research Center

2017 **Grant for Conference Funding**, Rutgers Dept. of Electrical & Computer Engineering
2015 **Rutgers Trustee Scholarship**, Rutgers University

2018 **Top 6 Shark-Tank Finalist**, MIT Intern Innovative Idea Challenge
2017 **Best Healthcare Hack**, HackRU F2017
2017 **Best Use of Machine Learning (4th)**, HackRU F2017

2021 nominated for **Sigma Xi** Associate Membership
2018 member of **Phi Beta Kappa** Honors Society
2017 member of Institute for Electrical and Electronics Engineering (**IEEE**)

TEACHING EXPERIENCE & MENTORSHIP

M2021 UMD AI4ALL Project Lead: Making Art with Neural Networks
S2020 TA CMSC417: Computer Networks, Prof. Nirupam Roy, UMD
F2019 TA CMSC132: OOP II, Prof. Nelson Pauda-Perez & Pedram Sadeghian, UMD
2016-2019 Lecturer, ML/AI Division Director, Rutgers IEEE E-Board
2016 Tutor, Math & Engineering, Rutgers OSS Educational Opportunity Fund
2013-2016 TA Chinese Second Language, Huaxia Morris Chinese Academy

MS students advised:
2022: Eric Changzhi Li, Srinidhi Hegde
2021: Janus Thor Kristjansson, Jiaxuan Mary Wu

BS students advised:
2022: Andy Qu
2020: Nikhil Pateel

GRADUATE COURSE PROJECTS

SM-Scraper: Analysis and Visualization of Scraped Social Media Content
Partners: Deepti Bisht, Ophir Gal, Jerry Qian, and Yiheng Xu
S2021 UMD, Intro to Data Visualization, Prof. Leilani Battle
In association with the Full Disclosure Project
Adversarial Attack on Single-view 3D Reconstruction
Partners: Neha Kalibhat, Vedant Nanda
F2021 UMD, Visual Learning & Recognition, Prof. Abhinav Shrivastava
Exploring Lexical and Syntactic Features of Reddit Suicidality Data
Partners: Yow-Ting Shiue, Md Main Uddin Rony
S2020 UMD, Computational Linguistics II, Prof. Philip Resnik
Nori Ray-Tracer
S2020 UMD, Advanced Computer Graphics, Prof. Matthias Zwicker
Transflow: Image-to-Image Translation using Normalizing Flows
Partners: Vaishnavi Patil, Manas Agarwal
F2019 UMD, Machine Learning, Prof. Soheil Feizi
Finding Tree Structures in Deep NLP Models
Partners: Benjamin Black, William Chen, Xiaoyu Liu
F2019 UMD, Computational Linguistics I, Prof. Hal Daume
Incorporating Dependency Relations for Deep Question Answering
Partners: Karl Mulligan, Kevin Pei, Vishal Rohra
S2018 Rutgers, Natural Language Processing, Prof. Matthew Stone