

## SHUHONG CHEN

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github: <https://github.com/ShuhongChen>

google scholar: <https://scholar.google.com/citations?hl=en&user=TcGJKGwAAAAJ>

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## EDUCATION

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### **PhD in Computer Science**

University of Maryland – College Park, MD

Class of 2024 (expected; entered 2019)

Advisor: Prof. Matthias Zwicker

Computer Vision/Graphics

### **BS in Computer Science and Mathematics**

Rutgers University, New Brunswick, NJ

Class of 2019 (entered 2015)

Honors College, Summa cum laude

Minor in Economics

## RESEARCH EXPERIENCE

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### **Vision Research Intern, ByteDance/TikTok**

*Mentors: Yiheng Zhu, Heng Wang, Yichun Shi*

*2022 May – 2022 August*

Intelligent Creation & Computer Vision - Generation Team, working on generative modeling of 3D VR character assets.

### **Research Assistant, UMD Department of Computer Science**

*Advisor: Prof. Matthias Zwicker*

*2020 June – 2024 May (expected)*

I am exploring novel ways of creating and manipulating illustrations and animations, by leveraging both modern data-driven computer vision techniques and the traditional 3D graphics pipeline. I am also exploring new methods for rendering using deep learning.

### **Vision/ML Research Intern, MIT Lincoln Laboratory**

*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.

### **Research Assistant, Rutgers Dept. of Electrical & Computer Engineering**

*Advisor: Prof. Ivan Marsic*

*2015 October – 2019 May*

I have done research in process mining, workflow analysis, data visualization, natural language processing, and computer vision for healthcare informatics, specifically trauma resuscitations. I have a first-authorship and around a dozen co-authorships through this lab.

## **SELECTED PUBLICATIONS**

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full list on google scholar: <https://scholar.google.com/citations?hl=en&user=TcGJKGwAAAAJ>

**Chen Shuhong**, & Zwicker Matthias. (2022). Improving the Perceptual Quality of 2D Animation Interpolation. arXiv preprint arXiv:2111.12792. (accepted at ECCV 2022)

**Chen Shuhong**, & Zwicker Matthias. (2022). Transfer Learning for Pose Estimation of Illustrated Characters. arXiv preprint arXiv:2108.01819. (accepted at WACV 2022)

Hadadan Saeed, **Chen Shuhong**, & Zwicker Matthias. (2021). Neural Radiosity. arXiv preprint arXiv:2105.12319. (accepted at SIGGRAPH Asia 2022)

**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), IEEE International Conference on Data Mining, 2017.

Li Xinyu, Zhang Yanyi, Li Mengzhu, **Chen Shuhong**, Farneth Richard, Marsic Ivan, Burd Randall S. “Online Process Phase Detection Using Multimodal Deep Learning.” (2016): IEEE 7<sup>th</sup> Annual Ubiquitous Computing, Electronics & Mobile Communication Conference (UEMCON), 2016.

Yang Sen, Zhou Moliang, **Chen Shuhong**, Dong Xin, Ahmad Omar, Burd Randall, Marsic Ivan. “Medical Workflow Modeling Using Alignment-Guided State-Splitting HMM.” (2017): 5<sup>th</sup> International Conference on Healthcare Informatics, 2017.

Li Xinyu, Zhang Yanyi, Zhang Jianyu, Chen Yueyang, **Chen Shuhong**, Gu Yue, Zhou Moliang, Marsic Ivan. “Progress Estimation and Phase Detection for Sequential Processes.” ACM Interactive Mobile Wearable and Ubiquitous Technologies (IMWUT, 2017).

Yang Sen, Dong Xin, Zhou Moliang, Li Xinyu, **Chen Shuhong**, Webman Rachel, Sarcevic Aleksandra, Marsic Ivan, Burd Randall S. “VIT-PLA: Visual Interactive Tool for Process Log Analysis.” (2016): KDD Workshop on Interactive Data Exploration and Analytics (IDEA’16). ACM SIGKDD Conference on Knowledge Discovery and Data Mining, 2016.

Gu Yue, Yang Kangning, Fu Shiyu, **Chen Shuhong**, Li Xinyu, Marsic Ivan. “Multimodal Affective Analysis Using Hierarchical Attention Strategy with Word-Level Alignment.” (2018): The 56<sup>th</sup> Annual Meeting of the Association of Computational Linguistics (ACL 2018).

Hu Wangsu, Yao Zijun, Yang Sen, **Chen Shuhong**. “Discovering Urban Travel Demands through Dynamic Zone Correlation in Location-based Social Networks.” (2018): European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD 2018).

Gu Yue, Li Xinyu, **Chen Shuhong**, Zhang Jianyu, Marsic Ivan. “Speech Intention Classification with Multimodal Deep Learning.” (2017): AI 2017: Canadian Conference on Artificial Intelligence, 2017.

## **HONORS & AWARDS**

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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 (4<sup>th</sup>)**, 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**)

## **GRADUATE COURSE PROJECTS**

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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

## **TEACHING EXPERIENCE & MENTORSHIP**

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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