Bo Chen

Postdoctoral Research Associate

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Education

University of Illinois at Urbana-Champaign *Urbana, IL*
Postdoctoral Research Associate Computer Science *Jul. 2022 - Present*
- Advisor: Prof. Klara Nahrstedt

University of Illinois at Urbana-Champaign *Urbana, IL*
PhD Computer Science *Sep. 2016 - May. 2022*
- Advisor: Prof. Klara Nahrstedt

Shanghai Jiao Tong University *Shanghai, China*
B.E. in Information Engineering *Sep. 2012 - Jun. 2016*
- Advisor: Prof. Xinbing Wang

Research & Working Experience

University of Illinois at Urbana-Champaign (Postdoc) *Urbana, IL*
Advisor: Prof. Klara Nahrstedt *Jul. 2022 - Present*
- Working project: "Resilient and Scalable Multi-view Video Streaming"
- Manuscript: "Resilient, Efficient and Accurate Query Serving via Conjugate Inference"
- Manuscript: "Managing Uncertainty in Video Streaming with Proactive Learning"
- Manuscript: "Onion Neural Network towards Scalable Vision"

University of Illinois at Urbana-Champaign (Ph.D.) *Urbana, IL*
Advisor: Prof. Klara Nahrstedt *Sep. 2016 - May. 2022*
- Dissertation: "Learning-based Saliency-aware Compression Framework"

AT&T Research Lab (Student intern) *Bedminster, NJ*
Co-Advisors: Dr. Shu Shi, Prof. Bo Han *May. 2019 - Aug. 2019*
- Project: "A novel transport protocol for latency-sensitive applications in LTE networks"

Facebook (Student intern) *Menlo Park, CA*
Advisor: Luke Wang *May. 2020 - Aug. 2020*
- Project: "A network device query system based on Elasticsearch "

Teaching Experience

2020	**CS 438 Communication Networks**, Teaching Assistant	*UIUC*
2022	**CS 537 Advanced Topics in IOT**, Teaching Assistant	*UIUC*
2023	**CS 537 Advanced Topics in IOT**, Teaching Assistant	*UIUC*

Mentoring

Jun. 2023 - Present	**Revan Ji, Undergraduate**, Project in progress: "Efficient Neural Rendering of Human Face with A Mixture of Volume and Mesh"	*UIUC*
Sep. 2022 - Present	**Aditi Tiwari, Master**, Project in progress: "Action-based Search in 360-degree Videos"	*UIUC*
Sep. 2022 - May. 2023	**Jiaxi Li, Master**, Paper accepted in NOSSDAV23: "Latency-Aware 360-Degree Video Analytics Framework for First Responders Situational Awareness"	*UIUC*
Oct. 2022 - May. 2023	**Jingwei Liao, Ph.D.**, Paper in submission: "Viewport Polyhedron-based 360-degree Image Compression"	*George Mason University*
Sep. 2022 - May. 2023	**Wei Luo, Master**, Paper accepted in Neural Compression Workshop at ICML 2023: "Neural Image Compression with Quantization Rectifier"	*Princeton University*
Oct. 2021 - May. 2022	**Wei Luo, Undergraduate**, Senior Thesis: "Learning Feature Saliency Towards Better Compression"	*UIUC*

Grants & Awards

2022	**Best Student Paper Award**, ACM Multimedia Systems Conference
2020	**Best Paper Award**, IEEE International Symposium on Multimedia
2019	**SIGMM Travel Grant**, ACM Multimedia Systems

Professional Involvement

2023	**Symposium on Edge Computing**, TPC Member
2023	**ACM Multimedia**, Reviewer
2023	**ImmerCom, workshop co-located with ACM MobiCom 2023**, TPC Member
2023	**IEEE SECON**, Publication Chair
2023	**ACM MMSys**, Reviewer
2024	**ACM MMSys**, TPC Member

Publications

Published

Wei Luo, **Bo Chen**, "Neural Image Compression with Quantization Rectifier," **ICML 2023 Workshop NCW**, 2023

Jiaxi Li, Jingwei Liao, **Bo Chen**, Anh Nguyen, Aditi Tiwari, Qian Zhou, Zhisheng Yan, Klara Nahrstedt, "Latency-Aware 360-Degree Video Analytics Framework for First Responders Situational Awareness," **ACM NOSSDAV**, 2023

[Best Student Paper Award] Bo Chen, Zhisheng Yan, Klara Nahrstedt, "Context-aware Image Compression Optimization for Visual Analytics Offloading," **ACM MMSys**, 2022

Ahmed Ali-Eldin, Chirag Goel, Mayank Jha, **Bo Chen**, Klara Nahrstedt, Prashant Shenoy, "CAVE: Caching 360° Videos at the Edge," **ACM NOSSDAV**, 2022

Bo Chen, Klara Nahrstedt, "EScALation: a framework for efficient and scalable spatio-temporal action localization," **ACM MMSys**, 2021

Bo Chen, Zhisheng Yan, Hongpeng Guo, Zhe Yang, Ahmed Ali-Eldin, Prashant Shenoy, Klara Nahrstedt, "Deep Contextualized Compressive Offloading for Images," AIChallengeIoT, Workshop co-located with **ACM SenSys**, 2021

Ragini Gupta, **Bo Chen**, Shengzhong Liu, Tianshi Wang, Sandeep Singh Sandha, Abel Souza, Klara Nahrstedt, Tarek Abdelzaher, Mani Srivastava, Prashant Shenoy, Jeffrey Smith, Maggie Wigness, Niranjan Suri, "DARTS: Distributed IoT Architecture for Real-Time, Resilient, and AI-Compressed Workflows", ApPLIED, Workshop co-located with **ACM PODC**, 2022

Qian Zhou, **Bo Chen**, Zhe Yang, Hongpeng Guo, Klara Nahrstedt, "360ViewPET: View Based Pose EsTimation for Ultra-Sparse 360-Degree Cameras", **IEEE ISM**, 2021

Bo Chen, Ahmed Ali-Eldin, Prashant Shenoy and Klara Nahrstedt, "Real-time Spatio-Temporal Action Localization in 360 Videos", **IEEE ISM**, 2020

[Best Paper Award] Jounsup Park, Mingyuan Wu, Eric Lee, **Bo Chen**, Klara Nahrstedt, Michael Zink, and Ramesh Sitaraman, "SEAWARE: Semantic Aware View Prediction System for 360-degree Video Streaming", **IEEE ISM**, 2020

Bo Chen, Zhisheng Yan, Haiming Jin, Klara Nahrstedt, "Event-driven Stitching for Tile-based 360 Video Live Streaming", **ACM MMSys**, 2019

Bo Chen, Klara Nahrstedt, "FIS: Facial Information Segmentation for Video Redaction", **IEEE MIPR**, 2019

Bo Chen, Klara Nahrstedt, Carl Gunter, "ReSPonSe: Real-time, Secure, and Privacy-aware Video Redaction System", **ACM MobiQuitous**, 2018

Tarek Elgamal, **Bo Chen**, Klara Nahrstedt, "Teleconsultant: Communication and analysis of wearable videos in Emergency Medical Environments", **ACM Multimedia**, 2017

Qianru Li, **Bo Chen**, Songjun Ma, Luoyi Fu, Xinbing Wang, "Contrastive Topic Discovery via Nonnegative Matrix Factorization", **IEEE ICC**, 2016

In Submission

Bo Chen, Hongpeng Guo, Mingyuan Wu, Zhe Yang, Zhisheng Yan, Klara Nahrstedt"DOLE: Practical and Bandwidth-Efficient Multiview Video Uploading"

Bo Chen, Wei Luo, Zhisheng Yan, Klara Nahrstedt, "Resilient, Efficient and Accurate Query Serving via Conjugate Inference"

Bo Chen, Zhisheng Yan, Yinjie Zhang, Zhe Yang, Klara Nahrstedt, " LiFteR: Unleash Learned Codecs in Video Streaming with Loose Frame Referencing"

Bo Chen, Mingyuan Wu, Hongpeng Guo, Zhisheng Yan, Klara Nahrstedt, "Vesper: Managing Uncertainty in Video Streaming with Proactive Learning"

Bo Chen, Mingyuan Wu, Hongpeng Guo, Zhisheng Yan, Klara Nahrstedt, "Onionization: A Systematic Multi-Network Training Approach"

Bo Chen, Zhisheng Yan, Klara Nahrstedt, "Context-aware Optimization for Bandwidth-Efficient Image Analytics Offloading"