Bowei Chen

Email: boweiche@andrew.cmu.edu
Personal Website: https://armastuschen.github.io

EDUCATION

Carnegie Mellon University, Pittsburgh, USA
Master of Science in Robotics (thesis) 2020-2022
- GPA: 4.0/4.3
- Advised by Prof. Srinivasa Narasimhan.
- Also work with Prof. Martial Hebert, Dr. Sing Bing Kang, and Dr. Tiancheng Zhi.

University of Wisconsin-Madison, Madison, USA
Visiting Student in Computer Science 2019
- GPA: 3.75/4.0

Northeastern University, Shenyang, China
Bachelor in Software Engineering 2016-2020
- GPA: 92/100; Ranking: 1/43
- Advised by Prof. Guibing Guo

RESEARCH EXPERIENCE

Carnegie Mellon University Pittsburgh, USA
Research Assistant, Supervisor: Prof. Srinivasa Narasimhan 08/2020-Present

Project: Learning Continuous Implicit Representation for Near-Periodic Patterns.
- Presented a single image based framework to learn Near-Periodic Patterns (NPP) representation, which was adapted to various applications including completion, resolution-enhanced remapping, and segmentation.
- Enabled NPP interpolation and extrapolation with various shapes and sizes of unknown masks. Enabled blurry regions recovery and segmentation of non-periodic regions in NPP.
- This work has been submitted to **CVPR 2022 (First Author)**.

Project: Diffuse-Specular Separation, Sun Direction Estimation, and Direct Sunlight Removal for Realistic Object Insertion.
- Assisted in building an appearance decomposition method for floor diffuse-specular separation and direct sunlight estimation on the planar floor and wall regions from a panoramic image.
- Working on designing the furniture removal pipeline.
- This work will be submitted to **SIGGRAPH 2022**.

Project: Normal Estimation for Specular Objects from a Single Image.
- Rendered a dataset containing different kinds of specular objects under different environment maps.
- Presented a distortion-aware normal estimation framework for specular objects from a single image.
- Achieved mean angle error of around 4 degrees for the estimated object normal.

Université Laval Québec City, Canada
Research Assistant, Supervisor: Prof. Jean-François Lalonde 06/2019-09/2019

Project: Learning High Dynamic Range from Indoor Panoramas
- Proposed an algorithm to learn High Dynamic Range (HDR) Panorama from Indoor Low Dynamic Range (LDR) panorama.
- Faithfully reconstructed saturated regions for LDR images in the Laval HDR databases. This work will be submitted to **ECCV 2022**.

Northeastern University Shenyang, China
Research Assistant, Supervisor: Prof. Guibing Guo 10/2017-01/2020

Project: Learning-based Recommendation Systems.

- Built and published several learning-based recommendation models, including hierarchical attentive sequential networks and GAN-based models. Managed three undergraduate research assistants.

Tencent Shenzhen, China
Research Intern, Supervisor: Dr. Fajie Yuan 10/2019-01/2020

Project: Sequential Recommendation Algorithm for Tencent Kandian.

- Proposed a non-autoregressive generative method and a mask refinement strategy for sequential recommendation. It performed better than the state-of-the-art methods on the Kandian Dataset.

PUBLICATIONS

[1] **Bowei Chen,** Tiancheng Zhi, Martial Hebert, Srinivasa Narasimhan. Neural Repeated Texture Field (NeRTF): Learning Continuous Implicit Representation for Near-Periodic Patterns. In CVPR 2022 (Under Review).

[2] Guibing Guo, **Bowei Chen (Only Student Researcher)**, Xiaoyan Zhang, Zhirong Liu, Zhenhua Dong, Xiuqiang He. Leveraging Title-Abstract Attentive Semantics for Paper Recommendation. In AAAI 2020.

[3] Guibing Guo, Huan Zhou, **Bowei Chen**, Zhirong Liu, Xiao Xu, Xu Chen, Zhenhua Dong. IPGAN: Generating Informative Item Pairs by Adversarial Sampling. In TNNLS.

[4] Rui Ding, Guibing Guo, Xiaochun Yang, **Bowei Chen**, Zhirong Liu, Xiuqiang He. BiGAN: Collaborative Filtering with Bidirectional Generative Adversarial Networks. In SDM 2020.

[5] Rui Ding, **Bowei Chen**, Guibing Guo, Xiaochun Yang. path2vec: Adversarial Path Sampling for Recommender Systems. In IEEE Intelligent Systems.

[6] Haihua Luo, Xiaoyan Zhang, **Bowei Chen**, Guibing Guo. Multi-view Visual Bayesian Personalized Ranking from Implicit Feedback. In UMAP 2018.

EXTRACURRICULAR ACTIVITY

Shenyang Licheng Community Shenyang, China
Volunteer 2017/9-2018/1

- Taught middle school students computer courses.

Social Practice to Explore the Culture of Internet Companies Shenzhen, China
Team leader 2018/7

- Led a 7-person team to visit Tencent and discussed the prospect of AI and deep learning with senior scientists.

HONORS & AWARDS

- National Scholarship 2017
- Excellent Individuals of Social Practice Activities of Northeastern University 2018
- Outstanding Volunteer in Licheng Community 2018
- Outstanding Graduates of Northeastern University 2019

SKILLS & INTERESTS

- Language Skills: Chinese (Native), English (Fluent), Cantonese (Conversational)
- Professional Skills: Python, Java, C++, C, Pytorch, Tensorflow, JavaScript