curriculum vitæ of
Chuan Guo
https://ericguo5513.github.io/ cguo2@ualberta.ca
+1 587 372 8931 google scholar

Education

Sep. 2019 – Dec. 2023 **Ph.D. candidate** in Software Engineering and Intelligent Systems University of Alberta, Canada
Dept. of Electrical and Computer Engineering

- Overall GPA: **3.93/4.0**
- Supervisor: Professor Li Cheng
- Research Interest: Artificial Intelligence, Computer Vision, Human behavior Modelling

Sep. 2013 – Jul. 2017 **B.Eng.** in Software Engineering (Pilot Program) Jilin University, China
College of Software

- Overall GPA: **89.57/100**
- Academic Ranking: **1/30** (in the program)

Experience

Sep. 2019 – Present Vision and Learning Lab, University of Alberta Edmonton, Canada
Research Assistant. Supervisor: Professor Li Cheng

Jan. 2021 – Jan. 2022 Huawei Technologies Canada Co., Ltd. Edmonton, Canada
Associate Researcher Intern. Mentor: Wei Lu

Mar. 2019 – Aug. 2019 Wangle Hulian Beijing Technology Co.Ltd Beijing, China
Algorithm Engineer. Mentor: Haibo Gu

Sep. 2017 – Mar. 2019 Institute of Computing Technology, Chinese Academy of Sciences Beijing, China
Research Assistant. Mentor: Juan Cao

Projects

Jan. 2021 – Present **Language Grounded 3D Human Behavior Modeling and Understanding** University of Alberta

1. Aimed to synthesize 3d human behaviors from text descriptions or in the inverse way, i.e. understand human behaviors through texts.
2. Annotated so-far the largest motion-language dataset, with 15k motions captioned by 50k descriptions.
3. A novel approach that generates realistic human motion with temporal VAE and RNNs (Demo) [3].
4. Built mutual mappings between 3D human motions and texts, motion captioning and text2motion generation respectively, using vector quantization and Transformers. [1]

Sep. 2019 – Jan. 2021 **3D Human Action and Video Generation** University of Alberta

1. The topic is to generate human behaviors conditioned on action categories.
2. Synthesized visually pleasing human motions by a novel VAE-based (i.e. Variational AutoEncoder) network with Lie pose representation, and curated own dataset (Demo Webpage) [7].
3. Built up a novel pipeline to generate human videos from action type & single image with graphics & machine learning apparatus (Demo) [5].

Sep. 2017 – Mar. 2019 **Fake News Detection on Social Media** ICT, Chinese Academy of Sciences

1. Designed, implemented and deployed algorithms for a real-time online fake news detection system[1].
2. Exploited the roles of emotion, multimodal contents and propagation for news credibility [8].
3. Developed a distributed crawling system that collected over 10 million posts from Weibo platform.

[0]The program selected **top 30** students amongst 281 in the 1st school year.
[1]newsverify.com

Apr. 2015 – Apr. 2016 **National Undergraduate Innovative Training Project** Jilin University

1. Developed a landscape recommendation system based on image retrieval method [9, 10, 11].
2. Adopted *Bag of Features* for image representation and *KD-Tree* for high-dimensional feature retrieval.

Honors & Contest

Nov. 2021	**Alberta Graduate Excellence Scholarship**	University of Alberta
Oct. 2016	**Qihoo 360 Scholarship** (top 5 out of 1000)	Jilin University
Nov. 2015	**National Scholarship** (top 5 out of 281)	Ministry of Education
Dec. 2015	Excellent Student of Jilin University	Jilin University
2014, 2015	Second-level Scholarship of Jilin University	Jilin University
2015, 2016	College Excellent Student	Jilin University
May 2015	The 1_{st} Prize in *Jilin Provincial Mathematical Contest in Modeling*	Jilin Province

Skills

Programming Languages: Python, C, C++, Java, C#, Matlab, R, HTML and Latex.
Technologies: PyTorch, Keras, SciPy, NumPy, Pandas, Scikit-learn, Weka, Jieba, UNIX, Git, Unity
Natural Languages: English, Chinese (mother language)

Publications

[1] **Guo, Chuan**, Xinxin Zuo, Sen Wang, and Li Cheng. "*TM2T: Stochastic and Tokenized Modeling for the Reciprocal Generation of 3D Human Motions and Texts.*" European conference on computer vision (ECCV). 2022.

[2] Zou, Shihao, Xinxin Zuo, Sen Wang, Yiming Qian, **Chuan Guo**, and Li Cheng. "*Human Pose and Shape Estimation from Single Polarization Images*." IEEE Transactions on Multimedia (2022).

[3] **Guo, Chuan**, Shihao Zou, Xinxin Zuo, Sen Wang, Wei Ji, Xingyu Li, and Li Cheng. "*Generating Diverse and Natural 3D Human Motion from Text.*" In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR). 2022.

[4] Ji, Wei, Jingjing Li, Qi Bi, **Chuan Guo**, Jie Liu, and Li Cheng. "*Promoting Saliency From Depth: Deep Unsupervised RGB-D Saliency Detection.*" In International Conference on Learning Representations. 2022.

[5] **Guo, Chuan**, Xinxin Zuo, Sen Wang, Xinshuang Liu, Shihao Zou, Minglun Gong, and Li Cheng. "*Action2video: Generating Videos of Human 3D Actions.*" International Journal of Computer Vision (2022): 1-31.

[6] Zou, Shihao, **Chuan Guo**, Xinxin Zuo, Sen Wang, Pengyu Wang, Xiaoqin Hu, Shoushun Chen, Minglun Gong, Li Cheng. "*EventHPE: Event-based 3-D Human Pose and Shape Estimation.*" IEEE International Conference on Computer Vision, pp. 10996-11005. 2021.

[7] **Guo, Chuan**, Xinxin Zuo, Sen Wang, Shihao Zou, Qingyao Sun, Annan Deng, Minglun Gong, and Li Cheng. "*Action2Motion: Conditioned Generation of 3D Human Motions.*" In Proceedings of the 28th ACM International Conference on Multimedia, pp. 2021-2029. 2020.

[8] **Guo, Chuan**, Juan Cao, Xueyao Zhang, Kai Shu, and Miao Yu. "*Exploiting emotions for fake news detection on social media.*" arXiv preprint arXiv:1903.01728 (2019).

[9] Ji, Kaixuan, **Chuan Guo**, Shengfu Zou, Yang Gao, and Hongwei Zhao. "*Image Retrieval Algorithm Based on Feature Fusion and Bidirectional Image Matching.*" In 2015 4th National Conference on Electrical, Electronics and Computer Engineering. Atlantis Press, 2015.

[10] Zou, Shengfu, **Chuan Guo**, Kaixuan Ji, Yang Gao, and Hongwei Zhao. "*Design and Implementation of Tourist Landmarks Recommending System.*" In 2016 3rd International Conference on Materials Engineering, Manufacturing Technology and Control. Atlantis Press, 2016.

[11] Jilin University. Landscapes Recommendation System V1.0[CP/CD]. Copyright Number: 2015SR259762