

Chen Huang

SENIOR DEEP LEARNING RESEARCH ENGINEER

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Summary

A Senior Deep Learning Research Engineer with a proven track record of building and shipping large-scale models for both generative AI and multimodal understanding. Expertise in developing foundation models for video generation and 3D content creation, with a deep focus on transformer architectures and diffusion models. Adept at the end-to-end development of novel, scalable systems, from data curation and training to inference optimization. A collaborative researcher with a strong product shipping history in computer vision and a passion for pushing the boundaries of world simulation and user-centric AI experiences.

Education

University of Missouri

PH.D. IN ELECTRICAL AND COMPUTER ENGINEERING

major in deep learning, computer vision, object detection and fine-grained recognition.

Columbia, Missouri, U.S.A

Aug. 2011 - Dec. 2017

Beihang University

B.S. IN DETECTION GUIDANCE AND CONTROL TECHNOLOGY

Beijing, China

Sep. 2006 - June. 2010

Work Experience

Apple Inc.

SENIOR DEEP LEARNING RESEARCH ENGINEER

Cupertino, California, U.S.A

Sep. 2017 - present

- Pioneered the development of **large-scale generative models for 3D content creation**, building cutting-edge model (e.g., Trellis-like architectures) that accurately generating complex 3D objects shape and texture directly from diverse inputs such as images and text.
- Led research and development of a novel **camera-controllable, multi-view video generation** from single image inputs. This cutting-edge work, focused on 3D consistency and camera controllability of generated frames, was published at ICML 2025.
- Developed a **3D scene understanding and semantic segmentation model** as a critical component of the Apple Object Capture framework. This involved releasing a large-scale system, directly contributed to a delightful user experience for creating real-world 3D content at scale.
- Spearheaded inference optimization for **Apple FaceID**, quantizing and compressing models for deployment on Apple's customized hardware. Achieved a 75% model size reduction, significant working memory savings, and accelerated real-time inferences with negligible accuracy loss.

Microsoft Research

COMPUTER VISION RESEARCH INTERN

Redmond, Washington, U.S.A

Mar. 2017 - Sep. 2017

- Developed a deep learning-based pedestrian detection algorithm achieving state-of-the-art accuracy in real-time.
- Deployed the algorithm to Intel customized deep learning chips and integrated it into Microsoft products.

Apple Inc.

DEEP LEARNING RESEARCH INTERN

Cupertino, California, U.S.A

May. 2016 - Sep. 2016

- Implemented knowledge distillation to train lightweight networks, reducing memory and storage requirements by 7x without accuracy loss.
- Achieved state-of-the-art face recognition performance on public benchmarks using significantly more compact models.

Publications

Cavia: Camera-controllable Multi-view Video Diffusion with View-Integrated Attention

Dejia Xu, Yifan Jiang, Chen Huang, Liangchen Song, Thorsten Gernoth, Liangliang Cao, Zhangyang Wang, Hao Tang

International Conference on Machine Learning (ICML), 2025

Spatially supervised recurrent convolutional neural networks for visual object tracking

Guanghan Ning, Zhi Zhang, Chen Huang, Xiaobo Ren, Haohong Wang, Canhui Cai, Zhihai He

Circuits and Systems (ISCAS), 2017 IEEE International Symposium on, 2017

Visual Informatics Tools for Supporting Large-Scale Collaborative Wildlife Monitoring with Citizen Scientists

Zhihai He, Roland Kays, Zhi Zhang, Guanghan Ning, Chen Huang, Tony X. Han, Josh Millsaugh, Tavis Forrester, William McShea

IEEE Circuits and Systems Magazine 16.1 (2016) pp. 73–86. 2016

Task-driven Progressive Part Localization for Fine-grained Recognition

Chen Huang, Zhihai He, Wenming Cao

IEEE Transactions on Multimedia (2016). 2016

Honors & Awards

2011-2017	Research Assistantship , University of Missouri	<i>Columbia, MO</i>
2016	Student Travel Grant , IEEE Winter Conference on Applications of Computer Vision	<i>Lake Placid, NY</i>
2010	Outstanding Student Scholarship , Beihang University	<i>Beijing, China</i>
2007	National Scholarship for Encouragement , Beihang University	<i>Beijing, China</i>

Skills

Programming Languages	Python, JAVA, C/C++	Distributed Training	Ray, Accelerate, PyTorch Lightning
Deep Learning Frameworks	PyTorch, TensorFlow, JAX	Tools & Libraries	AWS, Cloudflare, Docker