HAOZHE (TONY) CHEN

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EDUCATION

Columbia University, Columbia Engineering *Aug 2021 - May 2025*
- B.S., Computer Science & Operations Research, GPA: 4.07/4
- Courseworks: Modern Analysis; Statistical Inference; Machine Learning; Optimization
- Activities: Columbia Alpha Partners, Columbia Undergraduate TCS Seminar

INDUSTRY EXPERIENCE

Voloridge Investment Management *Quantitative Research Intern* *Sep 2023 - Dec 2023*
- Researched equity factor modeling with neural network

Voloridge Investment Management *Quantitative Research Intern* *May 2023 - Aug 2023*
- Researched predicting stock return with large-scale natural language datasets
- Modeled earning call transcripts and price movements with Large Language Models, clustering, and regression
- Designed procedure to predict commodity price movement with equity transcript data via prompting

Voloridge Investment Management *Quantitative Research Intern* *June 2021 - Aug 2021*
- Researched stock market clustering based on price history and corporation relations using graph neural network
- Produced stock groupings with improved intra-group correlations and adaptability to market changes

ACADEMIC EXPERIENCE

Decision, Risk, and Operations Division, Columbia Business School *Research Intern* *Apr 2023 - Present*
- Researched dynamic routing in queuing networks via differentiable event simulation (Advisor: Hongseok Namkoong)
- Leveraged inherent structure of queuing system to design a more efficient variant of Q-learning algorithm

Computer Science Department, Columbia University *Teaching Assistant* *Jan 2023 - May 2023*
- Served as teaching assistant for COMS 3261 Computer Science Theory. Held office hours, graded homeworks & exams.

Vision and Graphics Center, Columbia University *Research Intern* *Sep 2022 - Present*
- Researched robustness and interpretability of vision and language models (Advisor: Chengzhi Mao)
- Developed a method to interpret CLIP's internal image representations with textual prompts and enhanced its robustness against spurious features with parameter editing
- Developed a method to interpret Large Language Model's internal reasoning process

Spoken Language Processing Group, Columbia University *Research Intern* *Nov 2021 - Present*
- Researched computational analysis and synthesis of empathetic speech (Advisor: Julia Hirschberg)
- Developed machine learning models for detecting empathetic speech through acoustic and lexical analysis

Sen Lab, UC Santa Barbara *Research Intern* *June 2020 - Aug 2020*
- Researched in Sen Lab to develop a 3D object reconstruction model with VAE and 3D-GAN and analyze factors that contribute to successful reconstructions. Produced a 4-page paper and presented work at research symposium

PUBLICATIONS

Haozhe Chen, Carl Vondrick, Chengzhi Mao. "`SelfIE`: Self-Interpretation of Large Language Model Embeddings." *In submission.*

Haozhe Chen, Junfeng Yang, Carl Vondrick, Chengzhi Mao. "INViTE: INterpret and Control Vision Transformer with Text Explanations." *ICLR 2024.*

Run Chen, **Haozhe Chen**, Anushka Kulkarni, Eleanor Lin, Linda Pang, Divya Tadimeti, Julia Hirschberg. "Detecting Empathy in Speech." *In submission.*

HONORS AND AWARDS

Kaggle *Competition Expert (#144 of 160,000+)* *2020*
- Designed & trained models in natural language processing & computer vision in 20+ Kaggle competitions. Peak rank #144 out of 160,000+ users (top 0.1%)
- Won 7 silver medals and 9 bronze medals. Details available on Kaggle profile: kaggle.com/tonychenxyz

MCM Modeling Contest *Meritorious Award (6% of 13753)* *2020*

- Designed a regression-based model and constructed 2000+ lines of simulation to predict ocean temperature changes and impacts on fish migration; produced a 26-page paper

SKILLS AND INTERESTS

Programming Languages: Python, Java, MATLAB, C, HTML, JavaScript, CSS
Libraries: PyTorch, TensorFlow, Keras, scikit-learn, LightGBM, Pandas, NumPy
Interests: photography, cooking, creative writing, classical guitar, GeoGuessr, sim racing