# ZEYU ZHAO

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**Mobile:** $\frac{19\cdot\left(\int_{-\infty}^{+\infty} e^{-\frac{x^2}{2}}dx\right)^4\cdot\sum_{k=0}^{11}\left(\int_0^{+\infty} x^k\cdot e^{-x}dx\right)}{3\cdot\sum_{k=1}^{\infty}\frac{1}{k^2}}+\sum_{k=0}^{\infty}\frac{13884090}{e\cdot k!}$

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## Education Background

**Harvard University** — Cambridge, MA, USA
*M.Sc. in Computational Science & Engineering, GPA: 4.0 / 4.0* — 2017 - 2019

- Focus on Statistics, Machine Learning and Parallel Computing

**Simon Fraser University (Dual Degree Program)** — Burnaby, BC, Canada
*B.Sc. in Computing Science, Minor in Math, GPA: 4.22 / 4.33, First Class with Distinction* — 2014 - 2017

**Zhejiang University (Dual Degree Program)** — Hangzhou, ZJ, China
*B.Eng. in Computer Science & Technology, GPA: 3.91 / 4.0, China National Scholarship (top 1%)* — 2012 - 2014

## Work Experience

**ChohoTech** — Hangzhou, ZJ, China
*Co-founder & CTO* — Nov. 2021 - Present

Products

- ChohoCloud: Delivers highly available algorithm API services tailored for the dental industry.
- LingOral: A comprehensive medical imaging platform for storage, analysis, diagnosis, and management, designed for dental institutions and individual practitioners.
- 3D Studio: An advanced orthodontic planning and design software for manufacturing plants, clinics, or dentists seeking to produce in-house braces.
- Mooeli: A remote orthodontic monitoring solution for consumers, integrating both hardware and software components.

Job Responsibilities

- Led the development of a high-performance cloud-based platform for machine learning algorithm inference.
- Directed the research and development of cutting-edge AI algorithms for the dental industry, achieving industry-leading accuracy and processing speed.
- Oversaw the planning and design of complex software systems, ensuring seamless integration and scalability.
- Managed day-to-day operations, team development, and coordination for a 50-person RD team.
- Participated in strategic business negotiations with key clients and core suppliers.
- Responsible for budget management and enhancing the performance of the RD team.

**NVIDIA** — Santa Clara, CA, USA
*Sr. System Engineer - Machine Learning* — Mar. 2019 - Sept. 2021

- Technical lead of NVIDIA TLT (Transfer Learning Toolkit) Conversational AI module (including ASR, NLP and TTS)
- Main developer of SSD / DSSD / YOLOv3 / YOLOv4 detection architectures and multiple classification models in NVIDIA TLT Vision module, all support quantization-aware training / post-training quantization and model pruning.
- Implemented TensorRT plugins (with CUDA) so that TLT models can run on NVIDIA DeepStream.
- Main developer of the feature registration part of the internal access control system based on face recognition.
- Contributed to development of a high-quality internal model for people detection.
- Implemented simulators to generate synthetic data to assist network training, using both UE4 and NVIDIA Omniverse.
- Contributed to an internal few-shot learning project for fraud detection.

**NVIDIA** — Santa Clara, CA, USA
*System Engineer Intern - Machine Learning* — May. 2018 - Aug. 2018

**SFU Computational Logic Lab** Burnaby, BC, Canada
*Research Assistant (Advisor: Oliver Schulte)* Jan. 2015 – Mar. 2017

- Implemented a Markov model based on ~35M game events to evaluate actions on ice hockey games.
- Co-author of three related papers and one pending patent.

**Arista Networks Inc.** Burnaby, BC, Canada
*Software Developer Intern - EOS Kernel* Sept. 2015 - Dec. 2015

- Upgraded the iproute package and the corresponding test files to match the new kernel by investigating and rewriting most Arista-specified patches for this package.
- Adapted and rewrote Arista-specified kernel patches to improve its compatibility with Linux kernel 3.18.
- One patch I wrote was merged to Linux Kernel upstream *(printk: add clear_idx symbol to vmcoreinfo).*

## Publications

- Shi, Z., Meng, Z., Chen, R., Feng, Y., **Zhao, Z.**, Hao, J., ... & Zheng, Y. **LETA: Tooth Alignment Prediction Based on Dual-branch Latent Encoding.** *IEEE Transactions on Visualization and Computer Graphics, 2024.*
- O. Schulte, **Z. Zhao**, M. Javan, P. Desaulnier and C. Boucher. **Apples-to-Apples: Clustering and Ranking NHL Players Using Location Information and Scoring Impact.** *MIT Sloan Sports Analytics, 2017.*
- O. Schulte, M. Khademi, S. Gholami, **Z. Zhao**, M. Javan and P. Desaulnier. **A Markov Game Model for Valuing Actions, Locations, and Team Performance in Ice Hockey.** *Data Mining and Knowledge Discovery 31, 1735–1757 (2017)*
- O. Schulte, **Z. Zhao** and K. Routley. **What is the Value of an Action in Ice Hockey? Q-Learning for the NHL.** *Machine Learning and Data Mining for Sports Analytics - ECML/PKDD Workshop, 2015.*

## Patents

- (CN): **Zeyu Zhao**, Chenglong Ma. **Method for cutting bottom of dental three-dimensional digital model** *CN117765215A*
- (CN WO): Yiqun Song, **Zeyu Zhao**. **Computer-implemented method for generating orthodontic tooth treatment scheme** *CN118675698A*
- (CN WO): Chenglong Ma, **Zeyu Zhao**. **Segmentation method for dental three-dimensional digital model** *CN118691732A*
- (CN WO): Chenglong Ma, Wenke Yu, **Zeyu Zhao**. **Method for generating simulated lateral views after orthodontic treatment** *CN117726659A*
- (CN WO): Chenglong Ma, Danhua Ling, **Zeyu Zhao**. **Oral panoramic radiograph segmentation method** CN117765002A
- (CN WO): **Zeyu Zhao**, Jianqiao Cui. **Dental photography apparatus** *CN219126318U*
- (CN): **Zeyu Zhao**, Chenglong Ma. **Method for changing appearance of patient** *CN118887079A*
- (CN EP US): **Zeyu Zhao**, Jianqiao Cui. **Dental imaging device** *US20230293001A1*
- (CN DE US): **Zeyu Zhao**, Shangru Li, Parthasarathy Sriram, Farzin Aghdasi. **Object simulation using real-world environments** *US20220237336A1*
- (CA WO EP US): O. Schulte, S. Gholami, **Z. Zhao**, M. Javan and P. Desaulnier. **SYSTEM AND METHOD FOR EVALUATING TEAM GAME ACTIVITIES.** *US20190091541A1*

**You can find my complete patent list by searching for me on Google Patents.**

## Technical Skills

- Programming Languages: Python, C/C++, MySQL, JavaScript, HTML, CSS, PHP, MATLAB, R
- Packages / Toolkit: Pandas, Scikit-learn, Matplotlib, PyMC3, PyTorch, TensorFlow, Keras, TensorRT
- Knowledge of Database, Algorithms, Machine Learning, Computer Vision, Graphics, OS, Networking and Parallel Computing
- Code & Project Samples: **https://github.com/zeruniverse** (1900+ stars in total)