

Benjamin Bolte

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AI Researcher & Engineer

Summary

AI engineer, researcher and entrepreneur with experience at Facebook AI Research, Tesla Autopilot and Y Combinator. Full-stack engineer with experience in hardware, software and ML systems.

Experience

Founder & CEO, K-Scale Labs, YC W24

2023 - 2025

- Built and sold an open-source Unitree G1-like humanoid robot, the K-Bot
- Sourced Asian suppliers and completed production of 10 units
- Led full technical development encompassing CAD, PCB design, firmware, software, and ML systems
- Hired and managed 10+ engineers and contractors

Senior Research Engineer, Facebook AI Research

2022 - 2023

- Conducted research on semantic mapping for robotic applications

Senior Autopilot Engineer, Tesla Autopilot

2021 - 2022

- Developed first autoregressive transformer for autonomous vehicle waypoint prediction
- Architected neural network compiler rewrite for Tesla HW3 ASIC optimization
- Implemented CUDA kernels for voxel occupancy network training data generation
- Research and engineering contributions later integrated into Optimus humanoid robot platform

Research Engineer, Facebook AI Research

2018 - 2021

- Co-authored HuBERT: Self-Supervised Speech Representation Learning (IEEE TASLP 2021)
- Developed large-scale speech foundation model and pioneered novel representation learning methodology for continuous modalities
- Trained and deployed the first transformer model for content moderation, running on all Facebook posts and comments

Various Internships

2016 - 2017

- *Facebook*: Harmful content detection
- *Google Research*: Handwriting recognition
- *Amazon*: Invoicing APIs for Amazon India

Education

Emory University

B.S. Mathematics & Computer Science, 2013 - 2017

- Computational Neuroscience Training Grant: NIH-funded research grant (\$10,000 / year for two years)
- Dean's Achievement Scholarship: Highest undergraduate merit award (full tuition for three years)
- 3.9 GPA
- Language study in rural China (3 months)

Selected Research

B. Bolte, A. Wang, J. Yang, M. Mukadam, M. Kalakrishnan, C. Paxton, "USA-Net: Unified Semantic and Affordance Representations for Robot Memory," *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2023.

W.-N. Hsu, **B. Bolte**, Y.-H. H. Tsai, K. Lakhota, R. Salakhutdinov, A. Mohamed, "HuBERT: Self-Supervised Speech Representation Learning by Masked Prediction of Hidden Units," *IEEE/ACM Transactions on Audio, Speech, and Language Processing*, vol. 29, pp. 3451-3460, 2021.