

Kha Vu Chan

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EXPERIENCE

- **Microsoft** Seattle Area, WA
Software Engineer — Bing Search — Image Relevance Team 2019 — Present
 - **Accelerated** the training pipeline of the Bing's **Image Search Relevance Ranking** model by a **2x factor** and scaled it up, allowing more frequent shipment of relevance ranking models and enabling shorter experimentation iterations.
 - Migrated the training pipeline of my team's Image Search Relevance Ranking model to AzureML platform. Improved the model development and experimentation process. Suggested design improvements to Azure **Component SDK** and **Shrike**.
 - From 2019 to 2021, worked in Excel. Created features to help users make more accessible docs. Worked on both back-end and client side for all supported platforms. Created a VSCode extension that makes the usage of internal tools easier.
- **Samsung Research** Kyiv, Ukraine
Machine Learning Engineer — Context Recognition Lab Feb 2017 — Oct 2019
 - Optimized neural networks for mobile devices using pruning, quantization, representation sharing, distillation, weights sharing, and more. Achieved near-SOTA results with **50x improvement** in speed and memory usage.
 - For 2 months, temporarily **led a team** of 3 engineers for a Multi-Task Learning On-Device AI project. Drove the R&D process, technical decisions, and overall direction of the project. Was responsible for the project's progress and results.
 - Developed State-of-the-Art Deep Neural Networks for real-time Monocular 3D Scene Reconstruction of indoor scenes. Improved the stability of trained models by utilizing Tracking, SLAM, Object and Occlusion Detection techniques.

EDUCATION

- **Taras Shevchenko National University of Kyiv** Kyiv, Ukraine
Master of Science in Applied Mathematics, specialized in Computational Mathematics. Sep 2017 – Jun 2019
 - **MS thesis:** Adaptive representation sharing in Multi-Task Networks. Developed a new greedy NAS method to find the optimal multi-task branching. Implemented other SOTA multi-objective gradient aggregation and NAS methods.*Bachelor of Science in Applied Mathematics, specialized in Computational Mathematics.* Sep 2013 – Jun 2017
 - **BS thesis:** Breast Cancer Screening by analyzing the Interphase Nuclei of the Buccal Epithelium using Computer Vision techniques. Calibrated data to mitigate medical instrument biases. Developed an instance segmentation model.

PROJECTS

- **Hydra – a Deep Multi-Task Learning framework.** Implemented SOTA Multi-Objective Optimization methods (e.g. GradNorm, MGDA-UB) and developed a new NAS method for Multi-Task Neural Nets. (github.com/hav4ik/Hydra)
- **Eyesight – a framework for Real-Time Computer Vision.** A framework similar to **MediaPipe** for running real-time Computer Vision pipelines at the Edge. Supports Coral Edge TPU, RPi Camera, and more. (github.com/hav4ik/eyesight)
- **Google Landmarks Challenge 2020.** In just 3 weeks (out of 2 months), created a large-scale deep metric learning, image retrieval, and re-ranking system. Created a novel training routine for ArcFace. Finished 22nd out of 736 teams (**top 3%**).

AWARDS AND HONORS

- All-Ukrainian Computer Science Competition by Minor Academy of Sciences (**3rd place** in 2012 and **3rd place** in 2013).
- All-Ukrainian Intel ISEF Competition for high school students (**3rd place** in 2012 and **3rd place** in 2013).

MISCELLANEOUS

- **Deep Metric Learning lecturer** (2021). Gave a lecture to Kyiv DS community. Live-stream: youtu.be/aU9yEwgrJ54.
- [hav4ik.github.io/articles](https://github.com/hav4ik/articles) — personal blog where I write in-depth surveys & posts related to math and deep learning.
- **Competitive programming coach** (2013 — 2014). Prepared talented high-school students for National CS Olympiad.

SKILLS

- **Programming Languages:** C/C++, Python, C#, S#, TypeScript, SQL, KustoQL, Bash, Java, JavaScript, MatLab.
- **Technologies & Frameworks:** PyTorch, TensorFlow, Keras, TF-Lite, OpenCV, scikit-learn, LightGBM, .NET, Django, Unreal Engine, QT, Android Programming, Caffe, AzureML, Apache Spark, Docker, Kubernetes, GCP, AWS.
- **Languages:** English (TOEFL iBT 102), Vietnamese (native), Russian (native), Ukrainian (native).