Oguz Ulgen

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U.S. Citizen

SUMMARY

Principal engineer specializing in ML compilers and GPU kernel optimizations.

PROFESSIONAL EXPERIENCE

Meta Superintelligence Labs / Facebook **2016 – Present**

Principal Software Engineer

Co-founded Helion, an open-source DSL for ML kernel authoring

- Designed compiler infrastructure enabling ML engineers to write inference and training kernels using PyTorch semantics while automatically optimizing tiling, memory access patterns, and reduction strategies
- Built autotuning system that explores hundreds of configurations per kernel, achieving expert-level GPU performance without manual tuning
- Implemented optimized kernels for transformer workloads including attention, matmul, and normalization layers

Core developer on PyTorch Compiler

- Created the PyTorch Compiler cache and user-defined Triton kernel integration
- Significantly improved company-wide GPU utilization and compilation time for large-scale training and online inference jobs

Core developer on HHVM, JIT compiler that executes all server-side Hack Language code

- Built x86-64 assembly compiler optimizations: profile-guided load/store elimination, ref-counting elimination, inlining, and whole-program analysis
- Debugged production-critical incidents across Meta's server fleet; led large-scale codebase migrations to type-safe Hack

Facebook, Software Engineer Intern **Summer 2015**

Microsoft, Software Development Engineer Intern **Summer 2014**

Yahoo, Mobile Engineering Intern **Summer 2013**

PERSONAL PROJECTS

CudaPy Compiler **2015**

- Designed a JIT compiler translating CUDA kernels written in Python to optimized C++, predating modern tools like Triton
- Built Python runtime library exposing CUDA parallel computation APIs

EDUCATION

Carnegie Mellon University, Pittsburgh, PA **2012 - 2016**

- B.S. Computer Science, Minor in Mathematics
- Dean's List

SKILLS

ML/GPU: PyTorch, Triton, CUDA
Languages: Python, C/C++, Rust, OCaml, Haskell
Systems: x86 assembly, Bash