

KAZUKI MINEMURA

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Professional Summary

Experienced software optimization engineer with a broad technical background spanning high-performance computing (HPC), AI inference, computer vision, and OS kernel development. Spearheaded end-to-end initiatives, including debugging and performance tuning of compilers and AI libraries, designing computer vision systems, automating DevOps workflows, and contributing to open-source projects. Delivered technical training and customer support, while actively engaging in internal and external technical communication. Committed to team development through mentoring and collaborative leadership.

TECHNICAL SKILLS

Programming Languages:	Python, C/C++, FORTRAN, MATLAB, TypeScript, VBA
Deep Learning Frameworks:	OpenVINO, Caffe, Tensorflow, PyTorch
Development Tools:	Jira, HSDDES, Jenkins, Ansible, Docker, Git, Vim
Web Frameworks:	Angular, Tornado
Data Modeling/Management:	JSON, XML MongoDB
Typesetting:	TeX, LaTeX
Operating Systems:	GNU/Linux, MS Windows, Yocto BSP

PROFESSIONAL EXPERIENCE

Technical Consultant Engineer
Intel Kabushiki Kaisha, Tokyo, Japan
July 2022 - Present

Responsibilities:

- Delivered optimization support for toolchains across diverse high-performance computing (HPC) environments.
- Worked across a wide technical scope, including compilers, runtimes, profilers, AI libraries, and OS kernel-level components.
- Led end-to-end efforts from root cause analysis and performance tuning to the development of training content and hands-on technical enablement for internal and external stakeholders.
- Contributed to cross-functional collaboration and technical knowledge sharing within the engineering community.

Key Achievements:

- **Compiler Optimization & Bug Resolution:** Diagnosed issues in specific compiler optimization phases; proposed and implemented patches and long-term workarounds, improving developer productivity and tool reliability.
- **Deep Learning Framework Enhancement (oneDNN):** Identified and fixed critical source-level bugs affecting inference accuracy and speed in the oneDNN library.
- **Performance Tuning with Intel VTune:** Conducted hotspot analysis and multithreading optimization for customer applications; led performance tuning workshops and internal training sessions.

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- SYCL Enablement and Benchmarking: Led the migration of legacy codebases to SYCL, optimizing GPU workloads and improving performance benchmarks on Intel platforms.
- Technical Training Development: Created and delivered in-depth training programs on compiler internals, oneDNN, VTune, and SYCL for engineers and partners.
- vLLM Port to Intel XPU: Successfully ported CUDA-dependent modules in the vLLM inference engine to SYCL, enabling execution on Intel GPUs (XPU) and contributing enhancements to the open-source ecosystem.
- Linux Kernel Debugging for Woven Planet: Investigated and patched performance regressions and kernel panics on specific CPU models, stabilizing critical workloads and contributing to infrastructure reliability.

Success Factors:

- Full-Stack Technical Expertise: Demonstrated deep understanding across the software stack—from OS kernel-level development to AI libraries and GPU performance optimization.
- End-to-End Support Capabilities: Delivered comprehensive solutions covering debugging, performance tuning, and long-term maintainability.
- Effective Knowledge Sharing: Skilled in designing and delivering technical training and documentation to empower internal teams and external partners.
- Open-Source Impact: Actively contributed to the open-source community, including successful porting of vLLM to Intel XPU, accelerating ecosystem adoption.
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Computer Vision Engineer

Intel Microelectronics (M), Penang, Malaysia

Jan 2019 – Jun 2022

Responsibilities:

- Designed and deployed a POC of multi-view image grading system for standardized science exams administered by China's Ministry of Education.
- Developed computer vision and deep learning-based inference frameworks, validation pipelines, and DevOps environments.
- Contributed to technical education and talent recruitment through internal training and external engagements.

Key Achievements:

- AI-Powered Grading System: Built an image classification and object detection pipeline using OpenVINO to support multi-angle exam paper analysis.
- Robust QA Framework: Developed a scalable validation system encompassing over 6,000 test cases to ensure model accuracy and reliability across hardware platforms.
- DevOps Automation: Implemented a CI/CD infrastructure using Ansible, Docker, and Jenkins to streamline deployment and reduce testing cycle times.
- Team Leadership & Mentorship: Led cross-functional teams in model validation and benchmarking; mentored junior engineers and promoted engineering best practices.
- Client Technical Enablement: Provided hands-on support and consulting to client-side engineers, resulting in improved customer satisfaction and system adoption.

Success Factors:

- Delivered end-to-end AI solutions, from model development and optimization to deployment and support.
- Built cross-hardware validation systems enabling scalable testing across edge and cloud environments.
- Fostered a collaborative and knowledge-sharing culture as a technical leader and mentor.

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Software Validation Engineer

Jan 2018 - Dec 2018

Responsibilities:

- Designed and implemented an automation framework that significantly accelerated AI software development workflows.
- Developed object detection models leveraging LiDAR data for robust performance in real-world scenarios.
- Promoted the company's technical branding by presenting research results at international conferences and public events.

Key Achievements:

- 5x Efficiency Improvement: Increased testing efficiency fivefold by introducing scalable automation scripts, reducing manual effort and regression cycle times.
- LiDAR-Based AI Modeling: Designed and optimized object detection algorithms based on LiDAR signals, enhancing environmental perception accuracy.
- Global Research Dissemination: Presented research findings at international conferences and contributed to the company's visibility within the AI research community.
- High-Impact Public Engagement: Delivered a keynote speech at the IPIARTI Symposium, strengthening the company's reputation in the field of AI and robotics.

Success Factors:

- Proven ability to architect automation infrastructure that balances speed, scalability, and quality.
- Deep technical expertise in LiDAR-based perception systems tailored to real-world deployment.
- Strong public speaking and communication skills for effectively sharing technical insights with external audiences.

Graduate Trainee

Jun 2016 - Dec 2017

Responsibilities:

- Supported the development of LiDAR-based object detection models using computer vision and deep learning techniques.
- Conducted research on deep learning trends and contributed to technical communication across teams.
- Assisted in creating demos and materials for internal and external events.

Key Achievements:

- Model Development Support: Contributed to the design and experimentation of LiDAR object detection models, gaining hands-on experience with CV/DL pipelines.
- Team Collaboration: Facilitated knowledge sharing through weekly research meetings, improving alignment among team members.
- Technical Demonstration: Developed demos for internal events, effectively showcasing ongoing technical efforts.
- Open Source Contribution: Translated Autoware documentation into English, enhancing accessibility and encouraging broader OSS adoption.

Success Factors:

- Demonstrated the ability to quickly grasp and apply emerging technologies in real-world projects.
- Strong communication and collaboration skills that helped strengthen team synergy.

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- Proven capacity to contribute effectively as a beginner-level engineer with a proactive mindset.

EDUCATION

Ph.D. in Computer Science

Feb 2013 - Jan 2017

University of Malaya, Kuala Lumpur, Malaysia

- Conducted research on "Sketch - An Investigation into Feature Extraction in Compressed Domain"
- Published 2 ISI-indexed journal articles, 1 book chapter, and 8 peer-reviewed conference papers

M.S. in Electrical and Electronics Engineering

Apr 2010 - Mar 2012

Shinshu University, Nagano, Japan

B.S. in Electrical and Electronics Engineering

Apr 2006 - Mar 2010

Shinshu University, Nagano, Japan

PUBLICATIONS (Last 6 years)

ISI Indexed Journal

- J1. Raphaël C.-W. Phan, Yin-Yin Low, KokSheik Wong, **Kazuki Minemura**, "Strengthening speech content authentication against tampering". Speech Communication. Vol 6. 2021, (IF 2.017)
- J2. **Kazuki Minemura**, KokSheik Wong, C.-W Phan, Kiyoshi Tanaka, "A novel sketch attack for H.264/AVC format-compliant encrypted video". IEEE Transactions on Circuits and Systems for Video Technology. Jul. 2016, (IF 9.9)
- J3. **Kazuki Minemura**, KokSheik Wong, Xiaojun Qi and Kiyoshi Tanaka, "A Scrambling Framework for Block Transform Compressed Image," Multimedia Tools and Application, Feb. 2016, (IF 2.313)

Peer Reviewed Conference Paper

- C1. **Kazuki Minemura**, Hengfui Liao, Abraham Monrroy and Shinpei Kato, "LMNet: Real-time Multiclass Object Detection on CPU using 3D LiDAR", IEEE Conference on Intelligent Robot Systems (ACIRS), pp. 28-34, 2018.
- C1. Yiqi Tew, **Kazuki Minemura** and KokSheik Wong, "HEVC selective encryption using transform skip signal and sign bin", Asia-Pacific Signal and Information Processing Association (APSIPA), pp. 963-970, 2015.
- C2. Masaya Moriyama, **Kazuki Minemura** and KokSheik Wong, "Moving Object Detection in HEVC Video by Frame Sub-sampling," IEEE International Symposium on Intelligent Signal Processing and Communication Systems (ISPACS), pp. 48-52,

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2015.