ILLYA STARIKOV

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ill·YAH stah·REE·kohw | He/Him |

Software Engineer, Google, 8 years. Shipped **10M+** Pixel, Nest, and Beam devices. Built ML systems across **7** product lines: anomaly detection via clustering, failure classification (**98.5%** accuracy), quality regression (±**0.5 dB**). Production-hardened, research-ready.

EXPERIENCE

Software Engineer *Research, Labs*
Google Beam
1/2025 **Camera Team**

- Owned camera hardware-in-the-loop test (HILT) infrastructure, enabling new tests, hardware, and platforms
  - Eliminated **105**-day camera HILT failure streak within **1** month of start-date, resolved **10+** blocking issues
  - Collaborated with team to improve pass rate from **30%** to **100%**, grow suite from **10** to **30+** tests
- Re-architected camera software updater for multi-peripheral support, integrating new hardware configurations
- Drove cross-platform integration spanning device state management, client services, networking, and OS layers
- Reduced system image by **30%** (**700 MB**), implemented CI/CD presubmit checks, and built developer tooling
- Achieved code approval from Google Fellow **Sanjay Ghemawat** ("Sanjay Number of **1**")

9/2023 **Platforms**

- Designed end-to-end factory software architecture, **adopted by Google-HP partnership**
  - Aligned **25** cross-functional stakeholders spanning engineering, security, and program management
- Built secure data pipeline between Google and HP factories, enabling real-time production monitoring
- Unified factory interface through comprehensive testing and calibration framework
  - Formulated system health-checking as a factory final-assembly test via a Diagnostics framework
  - Integrated **6** mission-critical subsystems: audio, camera, displays, lighting, OS, USB
- Automated **25+** manual preflight tests, saving **2+** days of engineer time in 2024 alone

C++, Python, Bash

9/2023 **Software Engineer** *Platforms & Devices Product Area*
Google Central Test Engineering

- Shipped **10M+ Nest Cam, Pixel Tablet, Pixel Buds Pro/2** devices as factory audio software DRI
  - Saved **$120k** in capex via test code optimizations: Nest Cam (**52%** time reduced), Pixel Tablet (**23%**)
  - Achieved **36%** faster performance than any other Google audio test suite with Nest Cam
  - Pioneered Nest's first fully-remote hardware program from prototype to mass production during COVID-19
- Shipped **6** ML analytics models for automated fault detection across **7** Nest/Pixel products
  - Applied clustering to surface **10+** previously unknown defect patterns, generating labeled datasets
  - Built classification models achieving **98.5%** accuracy, automating defect detection
  - Developed regression models predicting quality metrics within ±**0.5 dB**, replacing manual measurement
- Mentored intern who built a data fusion of {"3D" Lidar + "2D" photos}, implementing feature matching via ML SuperGlue Network and OpenCV ORB, producing color depth-maps and interactive 3D reconstructions
- Spearheaded organization-wide scaling initiatives: documentation overhaul (**350** users/month, **750** sessions/month), expanded test coverage (hundreds of new test cases), standardized libraries achieving **70%** code reduction
- Created foundational tools adopted organization-wide: factory data downloader, unified audio test framework, knowledge-sharing platforms

12/2019 ○ Contributed **1.3M** lines of code across **16** languages to production systems

Python matplotlib, numpy, pandas, SciPy Git

∑ Garmin, **2y 6m**

12/2019 – 7/2018

Software Engineer — *Aviation*

Garmin Safety & Datalink

- Led system testing achieving DO-178B aviation safety compliance for **GDL-60** datalink receiver
  - Designed test architecture, built infrastructure, and authored comprehensive test plans
- Developed embedded software enabling configuration sync across dual OS environments (Garmin, Linux)
- Led STEM outreach: hovercraft engineering project (presented at Kansas State ACM), mentored Bring Your Child To Work Day, conducted facility tours

C Git

7/2018 – 8/2017

Software Engineering Intern — *Aviation*

Garmin Interfaces/Data Routing

- Built validation system for aviation tool achieving **25%** code reduction while enhancing reliability
- Delivered **10+** quality-of-life enhancements for aforementioned aviation tool

8/2017 – 5/2017

Software Engineering Intern — *Automotive OEM*

Garmin

- Improved automation suite reliability from **80%** to **100%** and achieved **5x** speed improvement through API optimization

Visual Studio

12/2017 – 4/2016

Team Lead, DRI — *Aerospace*

Missouri S&T Satellite Team Stereoscopic Imaging

- Led **6**-person interdisciplinary team developing nanosatellite payload with real-time stereoscopic imaging and 3D reconstruction for satellite monitoring
- Architected synchronized dual-camera system on Raspberry Pi for precise, space-based stereoscopic imaging
- Collaborated with chief engineer to design flight software meeting aerospace standards
- Achieved critical design review approval; satellite launch scheduled for 2026

5/2017 – 8/2016

Research & Teaching Assistant — *Computer Science*

Missouri University of Science and Technology

- Built discriminative subgraph algorithm comparing execution traces from correct vs. faulty runs to automatically pinpoint buggy code
- Taught programming fundamentals to hundreds of students across 4x classes and labs instances of Introduction to Programming and Data Structures
- Successfully detected plagiarism, style infractions, and bugs via self-developed automation using Stanford's MOSS

12/2014 – 9/2014

Assistant — *Employment Services*

Jefferson College — *Hillsboro, MO*

Rehired 5/2015–8/2015, 5/2016–8/2016

- Created user manual adopted as standard training resource for all new assistants
- Managed campus-wide student employment database and designed marketing materials

8/2014 – 5/2014

Web Developer

Freelance — *De Soto, MO*

- Delivered **6** client projects including websites, UI/UX design, and data analytics
- Specialized in WordPress and Bootstrap for responsive web development

5/2014 – 9/2013

Assistant — *Computer Lab*

Missouri Valley College — *Marshall, MO*

- Provided technical support to students with Visual Basic, C, and C++ programming assignments and projects
- Coached students in a diverse array of computer applications (Microsoft Suite, Visual Studio, etc.) and programming concepts, debugging techniques, and best practices for software development
- Maintained and updated software installations across lab workstations, ensuring compatibility with coursework

11/2012 **Hospitality Staff**
Villa Antonio Winery *Hillsboro, Missouri*
- Assisted with dining operations: hauled dishes, cleaned facilities, and maintained service standards
- Directed event parking and assisted with event setup for weddings and special occasions

6/2010 - Harvested grapes from vineyard and transported to production facility during summer seasons

Software Engineer **Google** Beam 1/2025–present
Software Engineer **Google** Beam 9/2023– 1/2025
Software Engineer **Google** Central Test Engineering 12/2019– 9/2023
Software Engineer **Garmin** Safety & Datalink 7/2018–12/2019
Software Engineering Intern **Garmin** Interfaces/Data Routing 8/2017– 6/2018
Software Engineering Intern **Garmin** Automotive OEM 5/2017– 8/2017
Bachelor of Science **Missouri S&T** Computer Science 1/2015–12/2018
Team Lead, DRI **Missouri S&T** Satellite Team 4/2016–12/2017
Research & Teaching Assistant **Missouri S&T** Computer Science 8/2016– 4/2017
Assistant **Missouri S&T** Computer Lab 1/2016– 4/2017
Assistant **Jefferson College** Employment Services ... 9/2014–12/2014, 5/2015–8/2015, 5/2016– 8/2016
Web Developer **Freelance** 5/2014– 8/2014
Assistant **Missouri Valley College** Computer Lab 9/2013– 5/2014
Hospitality Staff **Villa Antonio Winery** 6/2010–11/2012

artificial AI algorithms: evolutionary SAT solver, chess engine with minimax/alpha-beta, A* puzzle solver, hill climbing.

starikov.co Independent technical writing on AI, computer science, and mathematics. **70+** posts, **14k** views/year.

.dotfiles Multi-platform, enterprise-grade development environment with 80+ plugins, E2E tests, and **10+** shell tools.

EXPERTISE

tech

Languages	Python, C++, C, Bash, SQL
Additional	LaTeX, Swift, C#, Lua, Perl, Assembly, Lisp, Matlab, Vimscript, Basic, AppleScript, ActionScript
ML/AI	scikit-learn, TensorFlow, Colab, GCP Vertex AI
Tools	Docker, Git, Make, regex, tmux, Vim, Xcode, CI/CD, Linux
Markup	CSS, HTML, JSON, Markdown, reStructuredText, XML, YAML
Python	Cython, matplotlib, numpy, pandas, pdb, pyenv, SciPy, sphinx, tox, venv
C++17	abseil, Boost, catch2, lldb, STL, valgrind

impact

8 consumer/enterprise products launched, **25+** interviews conducted, **1** intern mentored, **800+** CLs submitted, **300+** code reviews, **100+** bugs fixed, **9** managers reported to

awards

8x Google Peer Bonus, **5x** Google Spot Bonus, Google "Thank You" campaign recipient, {Garmin new-hire, Google Noogler oritentation, Google Beam semi-annual summit} trivia champion, Summa Cum Laude, **1st** Place MegaMiner AI, **6x** Dean's List, **18th/229** Missouri S&T ACM Competitor

EDUCATION

12/2018 **Bachelor of Science** Computer Science
1/2015 **Missouri University of Science and Technology** *Rolla, MO*
GPA 3.83/4.0; Major GPA **3.88/4.0**
Summa Cum Laude
Advisers Dr. Jennifer Leopold, Dr. A. Ricardo Morales, Dr. Simone Silvestri, Professor Clayton Price
Associations
- **ACM** Academy of Computing Machinery 2/2016–5/2018
- **MSAT** Missouri S&T Satellite Team 12/2017–5/2018
- **IEEE** Institute of Electrical and Electronics Engineers 1/2016–5/2017

Private Pilot Ground School 3/2019–5/2019
Jefferson College 8/2014–12/2014 *A+ scholarship*
Missouri Valley College 8/2013–5/2014 *Track & Field scholarship*

5/2013 | High School — *Diploma*

8/2009 | **De Soto Senior High** — *De Soto, MO*

Associations Cross-Country (Class **3**, **2x** All-District individual [2011–2012], **1x** All-District team [2012], **#5** team state ranking [2012]), Track & Field, Future Business Leaders of America (FBLA)

5/2009 | Elementary, Middle School — *Diploma*

8/2000 | **Sunrise R-IX School District** — *De Soto, MO*

Associations Cross-Country, Basketball, Computer Club, Quiz Bowl, Chess Club, Yearbook Design

Awards Presidential Fitness Award [x8, 2001–2009], School Speech Contest Winner