# Illya Starikov


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**San Francisco Bay Area**
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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 infrastructure, enabling new tests, hardware, and platforms
  - Eliminated **105**-day camera test 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
- Earned code approval from Google Fellow **Sanjay Ghemawat** for fixing company-wide documentation

9/2023 **Platform Team**

- Designed factory software architecture **adopted by Google-HP partnership** for Beam manufacturing
  - 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, calibration and 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

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

G | *Software Engineer* **Google** Beam ..... 9/2023-present
G | *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.
**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, 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