# ILLYA STARIKOV

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📍 **San Francisco Bay Area**

**ill·YAH stah·REE·kohw** | **He/Him** | 🇺🇦🇺🇸

Software Engineer scaling AI to build the future of ~~digital~~ communication. Architected ML systems across **7** product lines achieving **98.5**% accuracy. Driven to solve impactful, real-world problems using data, science, and mathematics.

## EXPERIENCE

| 1/2025 | **Software Engineer** | *Research, Labs* |
|---|---|---|
| G | **Google** Beam | *San Francisco Bay Area* |

- Owned camera hardware-in-the-loop test (HILT) infrastructure, enabling new tests, hardware, and platforms
  - Eliminated **105**-day camera HILT failure streak $\in$ **1** month of start-date, resolved $10^+$ blocking issues
- Re-architected camera software updater for multi-peripheral support, integrating new hardware configurations
- 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**")
- Ⓒ 🐍 🎲 *C++, Bash*

| 1/2025 9/2023 | **Software Engineer** | *Research, Labs* |
|---|---|---|
| G | **Google** Beam | *San Francisco Bay Area* |

- 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
  - Integrated **6** mission-critical subsystems: audio, camera, displays, lighting, OS, USB
  - Formulated system health-checking as a factory final-assembly test via a Diagnostics framework
- Automated $25^+$ manual preflight tests, saving $2^+$ days of engineer time in 2024 alone
- Ⓒ 🐍 🎲 *C++, Python, Bash*

| 9/2023 12/2019 | **Software Engineer** | *Platforms & Devices Product Area* |
|---|---|---|
| G | **Google** Central Test Engineering | *San Francisco Bay Area* |

- Shipped $10 M^+$ **Nest Cam, Pixel Tablet, Pixel Buds Pro 1/2** devices as factory audio software DRI
  - Optimized test execution generating **$120** k capex savings: 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
- Built ML-driven analytics system transforming factory data into actionable insights for $7^\times$ Nest and Pixel products
  - Deployed **6** ML applications: clustering novel failure patterns to make $10^+$ datasets, classification of said patterns with **98.5**% accuracy, regression for additional quality metrics within $1/2$ dB accuracy
- 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
- Contributed $1.3M$ lines of code across **16** languages to production systems
- 🐍 *Python* matplotlib, numpy, pandas, SciPy 🐙 🌱 Git

$\sum$ ──────────────────────────────────────── Garmin, **2**y **6**m **11**d

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| 12/2019<br>7/2018<br>▲ | **Software Engineer**<br>**Garmin** Safety & Datalink | *Aviation*<br>*Kansas City Area* |

- 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

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| 7/2018<br>8/2017<br>▲ | **Software Engineering Intern**<br>**Garmin** Interfaces/Data Routing | *Aviation*<br>*Rolla, MO* |

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

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| 8/2017<br>5/2017<br>▲ | **Software Engineering Intern**<br>**Garmin** | *Automotive OEM*<br>*Los Angeles* |

- Improved automation suite reliability from $80\%$ to $100\%$ and achieved $5^\times$ speed improvement through API optimization

Ⓒ  Visual Studio

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|---|---|---|
| 12/2017<br>4/2016 | **Team Lead & DRI**<br>**Missouri S&T Satellite Team** Stereoscopic Imaging | *Aerospace*<br>*Rolla, MO* |

- 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

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| 5/2017<br>8/2016 | **Undergraduate Teaching Assistant**<br>**Missouri University of Science and Technology** | *Computer Science*<br>*Rolla, MO* |

- Taught programming fundamentals to hundreds of students across Introduction to Programming and Data Structures (class+lab)
- Successfully detected plagiarism, style infractions, and bugs via self-developed automation using Stanford's MOSS

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| 12/2014<br>9/2014 | **Assistant**<br>**Jefferson College** | *Employment Services*<br>*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

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| 8/2014<br>5/2014 | **Web Developer**<br>**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

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| Ⓖ *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 | 8/2017– 6/2018 |
| ▲ *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 |
| *Undergraduate 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 |

## EXPERTISE

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| tech | **Languages** Python, C++, C, Bash, SQL, LaTeX, Swift, C#, Lua, Perl |
| | *Additional* 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 |
| stats | 8 consumer/enterprise products launched, $15^+$ interviews conducted, **1** intern mentored, $800^+$ CLs submitted, $300^+$ code reviews, $100^+$ bugs fixed, **9** managers reported to |
| awards | $8^\times$ Google Peer Bonus, $4^\times$ Google Spot Bonus, Google Recognition Award, {Garmin, Google, Starline} trivia champion, $1^{st}$ Place MegaMiner AI, Summa Cum Laude, $6^\times$ Dean's List, $18^{th}/\mathbf{229}$ Missouri S&T ACM Competitor |

## EDUCATION

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|---|---|
| 12/2018 1/2015 | **Bachelor of Science** Computer Science |
| | **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 |
| | **Coursework** Artificial Intelligence, Evolutionary Computing, Data Mining, Object-Oriented Numerical Modeling, Analysis of Algorithms, Undergraduate Research, Differential Equations, Calculus, Linear Algebra, Statistics, Modern Physics, Physics, Discrete Mathematics, Web Design, Micro Embedded Design, Chemistry |
| | 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 8/2009 | High School *diploma* |
| | **De Soto Senior High** *De Soto, MO* |
| | **Associations** Cross-Country (Class **3**, $2^\times$ All-District individual [2011–2012], $1^\times$ All-District team [2012], #**5** team state ranking [2012]), Track & Field, Future Business Leaders of America (FBLA) |
| 5/2009 8/2000 | Elementary, Middle School *diploma* |
| | **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 |