

# ILLYA STARIKOV





















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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 ( $\pm 0.5$  dB). Production-hardened, research-ready.

## EXPERIENCE

	<b>Software Engineer</b> <b>Google</b> Beam <b>Camera Team</b>	<i>Research, Labs</i> <i>San Francisco Bay Area</i>
1/2025	<ul style="list-style-type: none"><li>Owned camera hardware-in-the-loop test (HILT) infrastructure, enabling new tests, hardware, and platforms<ul style="list-style-type: none"><li>Eliminated <b>105-day</b> camera HILT failure streak within <b>1</b> month of start-date, resolved <b>10+</b> blocking issues</li><li>Collaborated with team to improve pass rate from <b>30%</b> to <b>100%</b>, grow suite from <b>10</b> to <b>30+</b> tests</li></ul></li><li>Re-architected camera software updater for multi-peripheral support, integrating new hardware configurations</li><li>Drove cross-platform integration spanning device state management, client services, networking, and OS layers</li><li>Reduced system image by <b>30%</b> (<b>700 MB</b>), implemented CI/CD presubmit checks, and built developer tooling</li><li>Earned code approval from Google Fellow <b>Sanjay Ghemawat</b> ("Sanjay Number of 1")</li></ul>	
9/2023	<b>Platform Team</b> <ul style="list-style-type: none"><li>Designed factory software architecture <b>adopted by Google-HP partnership</b> for Beam manufacturing<ul style="list-style-type: none"><li>Aligned <b>25</b> cross-functional stakeholders spanning engineering, security, and program management</li></ul></li><li>Built secure data pipeline between Google and HP factories, enabling real-time production monitoring</li><li>Unified factory interface through comprehensive testing, calibration and diagnostics framework<ul style="list-style-type: none"><li>Integrated <b>6</b> mission-critical subsystems: audio, camera, displays, lighting, OS, USB</li></ul></li><li>Automated <b>25+</b> manual preflight tests, saving <b>2+</b> days of engineer time in 2024 alone</li></ul> <i>C++, Python, Bash</i>	
9/2023	<b>Software Engineer</b> <b>Google</b> Central Test Engineering	<i>Platforms &amp; Devices Product Area</i> <i>San Francisco Bay Area</i>
	<ul style="list-style-type: none"><li>Shipped <b>10M+ Nest Cam, Pixel Tablet, Pixel Buds Pro/2</b> devices as factory audio software DRI<ul style="list-style-type: none"><li>Saved <b>\$120k</b> in capex via test code optimizations: Nest Cam (<b>52%</b> time reduced), Pixel Tablet (<b>23%</b>)</li><li>Achieved <b>36%</b> faster performance than any other Google audio test suite with Nest Cam</li><li>Pioneered Nest's first fully-remote hardware program from prototype to mass production during COVID-19</li></ul></li><li>Shipped <b>6</b> ML analytics models for automated fault detection across <b>7</b> Nest/Pixel products<ul style="list-style-type: none"><li>Applied clustering to surface <b>10+</b> previously unknown defect patterns, generating labeled datasets</li><li>Built classification models achieving <b>98.5%</b> accuracy, automating defect detection</li><li>Developed regression models predicting quality metrics within <math>\pm 0.5</math> dB, replacing manual measurement</li></ul></li><li>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</li><li>Spearheaded organization-wide scaling initiatives: documentation overhaul (<b>350</b> users/month, <b>750</b> sessions/month), expanded test coverage (hundreds of new test cases), standardized libraries achieving <b>70%</b> code reduction</li><li>Created foundational tools adopted organization-wide: factory data downloader, unified audio test framework, knowledge-sharing platforms</li></ul>	
12/2019	<ul style="list-style-type: none"><li>Contributed <b>1.3M</b> lines of code across <b>16</b> languages to production systems</li></ul> <i>Python</i> matplotlib, numpy, pandas, SciPy <i>Git</i>	
Σ		Garmin, 2y 6m 11d


12/2019	<b>Software Engineer</b> <b>Garmin</b> Safety & Datalink	Aviation Kansas City Area
	<ul style="list-style-type: none"> <li>◦ Led system testing achieving DO-178B aviation safety compliance for <b>GDL-60</b> datalink receiver <ul style="list-style-type: none"> <li>◦ Designed test architecture, built infrastructure, and authored comprehensive test plans</li> </ul> </li> <li>◦ Developed embedded software enabling configuration sync across dual OS environments (Garmin, Linux)</li> <li>◦ Led STEM outreach: hovercraft engineering project (presented at Kansas State ACM), mentored Bring Your Child To Work Day, conducted facility tours</li> </ul>	
7/2018	  Git	
7/2018	<b>Software Engineering Intern</b> <b>Garmin</b> Interfaces/Data Routing	Aviation Rolla, MO
8/2017	<ul style="list-style-type: none"> <li>◦ Built validation system for aviation tool achieving <b>25%</b> code reduction while enhancing reliability</li> <li>◦ Delivered <b>10+</b> quality-of-life enhancements for aforementioned aviation tool</li> </ul>	
8/2017	<b>Software Engineering Intern</b> <b>Garmin</b>	Automotive OEM Los Angeles
5/2017	<ul style="list-style-type: none"> <li>◦ Improved automation suite reliability from <b>80%</b> to <b>100%</b> and achieved <b>5x</b> speed improvement through API optimization</li> </ul>  Visual Studio	
12/2017	<b>Team Lead, DRI</b>  <b>Missouri S&amp;T Satellite Team</b> Stereoscopic Imaging	Aerospace Rolla, MO
	<ul style="list-style-type: none"> <li>◦ Led <b>6</b>-person interdisciplinary team developing nanosatellite payload with real-time stereoscopic imaging and 3D reconstruction for satellite monitoring</li> <li>◦ Architected synchronized dual-camera system on Raspberry Pi for precise, space-based stereoscopic imaging</li> <li>◦ Collaborated with chief engineer to design flight software meeting aerospace standards</li> </ul>	
4/2016	◦ Achieved critical design review approval; satellite launch scheduled for 2026	
5/2017	<b>Research &amp; Teaching Assistant</b> <b>Missouri University of Science and Technology</b>	Computer Science Rolla, MO
	<ul style="list-style-type: none"> <li>◦ Built discriminative subgraph algorithm comparing execution traces from correct vs. faulty runs to automatically pinpoint buggy code</li> <li>◦ Taught programming fundamentals to hundreds of students across 4x classes and labs instances of Introduction to Programming and Data Structures</li> <li>◦ Successfully detected plagiarism, style infractions, and bugs via self-developed automation using Stanford's MOSS</li> </ul>	
8/2016		
12/2014	<b>Assistant</b>  <b>Jefferson College</b>	Employment Services Hillsboro, MO
	Rehired 5/2015–8/2015, 5/2016–8/2016	
9/2014	<ul style="list-style-type: none"> <li>◦ Created user manual adopted as standard training resource for all new assistants</li> <li>◦ Managed campus-wide student employment database and designed marketing materials</li> </ul>	
8/2014	<b>Web Developer</b> <b>Freelance</b>	De Soto, MO
5/2014	<ul style="list-style-type: none"> <li>◦ Delivered <b>6</b> client projects including websites, UI/UX design, and data analytics</li> <li>◦ Specialized in WordPress and Bootstrap for responsive web development</li> </ul>	
5/2014	<b>Assistant</b>  <b>Missouri Valley College</b>	Computer Lab Marshall, MO
	<ul style="list-style-type: none"> <li>◦ Provided technical support to students with Visual Basic, C, and C++ programming assignments and projects</li> <li>◦ 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</li> <li>◦ Maintained and updated software installations across lab workstations, ensuring compatibility with coursework</li> </ul>	
9/2013		





11/2012	 <b>Hospitality Staff</b>	
	<b>Villa Antonio Winery</b>	<i>Hillsboro, Missouri</i>
	<ul style="list-style-type: none"> <li>Assisted with dining operations: hauled dishes, cleaned facilities, and maintained service standards</li> <li>Directed event parking and assisted with event setup for weddings and special occasions</li> </ul>	
6/2010	 <b>Software Engineer Google</b> Beam	1/2025–present
	 <b>Software Engineer Google</b> Beam	9/2023– 1/2025
	 <b>Software Engineer Google</b> Central Test Engineering	12/2019– 9/2023
	 <b>Software Engineer Garmin</b> Safety & Datalink	7/2018–12/2019
	 <b>Software Engineering Intern Garmin</b> Interfaces/Data Routing	8/2017– 6/2018
	 <b>Software Engineering Intern Garmin</b> Automotive OEM	5/2017– 8/2017
	 <b>Bachelor of Science Missouri S&amp;T</b> Computer Science	1/2015–12/2018
	 <b>Team Lead, DRI Missouri S&amp;T</b> Satellite Team	4/2016–12/2017
	 <b>Research &amp; Teaching Assistant Missouri S&amp;T</b> Computer Science	8/2016– 4/2017
	 <b>Assistant Missouri S&amp;T</b> Computer Lab	1/2016– 4/2017
	 <b>Assistant Jefferson College</b> Employment Services	9/2014–12/2014, 5/2015–8/2015, 5/2016– 8/2016
	 <b>Web Developer Freelance</b>	5/2014– 8/2014
	 <b>Assistant Missouri Valley College</b> Computer Lab	9/2013– 5/2014
	 <b>Hospitality Staff Villa Antonio Winery</b>	6/2010–11/2012
	 <b>artificial</b> AI algorithms: evolutionary SAT solver, chess engine with minimax/alpha-beta, A* puzzle solver.	
	 <b>starikov.co</b> Independent technical writing on AI, computer science, and mathematics.	<b>70+</b> posts, <b>14k</b> views/year.
	 <b>.dotfiles</b> Multi-platform, enterprise-grade development environment with <b>80+</b> plugins, and <b>10+</b> shell tools.	

## EXPERTISE

tech	<b>Languages</b> Python, C++, C, Bash, SQL <b>Additional</b> LaTeX, Swift, C#, Lua, Perl, Assembly, Lisp, Matlab, Vimscrip, Basic, AppleScript, ActionScript <b>ML/AI</b> scikit-learn, TensorFlow, Colab, GCP Vertex AI <b>Tools</b> Docker, Git, Make, regex, tmux, Vim, Xcode, CI/CD, Linux <b>Markup</b> CSS, HTML, JSON, Markdown, reStructuredText, XML, YAML <b>Python</b> Cython, matplotlib, numpy, pandas, pdb, pyenv, SciPy, sphinx, tox, venv <b>C++17</b> abseil, Boost, catch2, lldb, STL, valgrind
impact	<b>8</b> consumer/enterprise products launched, <b>25+</b> interviews conducted, <b>1</b> intern mentored, <b>800+</b> CLs submitted, <b>300+</b> code reviews, <b>100+</b> bugs fixed, <b>9</b> managers reported to
awards	<b>8x</b> Google Peer Bonus, <b>5x</b> Google Spot Bonus, Google “Thank You” campaign recipient, {Garmin new-hire, Google Noogler orientation, Google Beam semi-annual summit} trivia champion, Summa Cum Laude, <b>1st</b> Place MegaMiner AI, <b>6x</b> Dean’s List, <b>18th/229</b> Missouri S&T ACM Competitor

## EDUCATION

12/2018	<b>Bachelor of Science</b> Computer Science	
1/2015	<b>Missouri University of Science and Technology</b>	<i>Rolla, MO</i>
	 <b>GPA 3.83/4.0; Major GPA 3.88/4.0</b>	<i>Summa Cum Laude</i>
	<b>Advisers</b> Dr. Jennifer Leopold, Dr. A. Ricardo Morales, Dr. Simone Silvestri, Professor Clayton Price	
	<b>Associations</b>	
	◦ <b>ACM</b> Academy of Computing Machinery	2/2016–5/2018
	◦ <b>MSAT</b> Missouri S&T Satellite Team	12/2017–5/2018
	◦ <b>IEEE</b> Institute of Electrical and Electronics Engineers	1/2016–5/2017
	<b>Coursework</b> 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	
	<b>Jefferson College</b> 8/2014–12/2014 <i>A+ scholarship</i>	
	<b>Missouri Valley College</b> 8/2013–5/2014 <i>Track &amp; Field scholarship</i>	
5/2013	High School	<i>Diploma</i>
8/2009	<b>De Soto Senior High</b>	<i>De Soto, MO</i>
	<b>Associations</b> Cross-Country (Class <b>3</b> , <b>2x</b> All-District individual [2011–2012], <b>1x</b> All-District team [2012], <b>#5</b> team state ranking [2012]), Track & Field, Future Business Leaders of America (FBLA)	
5/2009	Elementary, Middle School	<i>Diploma</i>
8/2000	<b>Sunrise R-IX School District</b>	<i>De Soto, MO</i>
	<b>Associations</b> Cross-Country, Basketball, Computer Club, Quiz Bowl, Chess Club, Yearbook Design <b>Awards</b> Presidential Fitness Award [x8, 2001–2009], School Speech Contest Winner	