ANTON TRESKUNOV

Senior Computer Vision & ML Engineer | PhD

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SUMMARY

Innovative PhD-level engineer with 15+ years of delivering production-grade computer-vision and 3-D perception systems for autonomous vehicles, construction robotics, and consumer electronics. Expert in LiDAR & RGB-D pipelines, point-cloud registration, deep learning (PyTorch), and real-time C++/Python. Named inventor on 8+ U.S. patents and co-author of 26+ peer-reviewed publications. Proven record of turning research into shipped products—from identifying user pain points and rapid prototyping to user-study validation and large-scale launch (e.g., Samsung Smart-TV handwriting UI). Active open-source contributor.

CORE EXPERTISE

• 3D Computer Vision (SLAM, ICP, multi-sensor fusion) • Deep Learning (CNN, YOLOX, Transformers) • Point-Cloud Processing (PCL, Open3D) • Lidar perception • Real-time C++11/20 & Python • PyTorch, Triton Inference Server • ROS • MLOps (Docker, CI/CD, AWS/GCP) • Data-driven algorithm evaluation & visualization • Leadership & mentoring

PROFESSIONAL EXPERIENCE

Kelly Services (Nissan ADAS R&D) — Senior Perception Engineer Remote | Apr 2023 – Mar 2024

• **Developed an interactive perception-debugging toolkit** that visualizes multi-object tracking on Velodyne point clouds; released its core Python LiDAR decoder as an open-source module.

NavTrac — Computer Vision Engineer Remote | Jun 2021 – Oct 2022

- Architected and deployed the "Activity Detector," a real-time truck-motion extraction pipeline for 24 / 7 gate cameras. Combined YOLOX detection, Kalman-filter tracking, visual-similarity re-ID, and deep matching in a Python/PyTorch stack served via Triton on AWS EKS.
- Built a key-frame extractor that tracks moving container text, selecting representative frames, and trimming manual review sets by an order of magnitude.

Doxel.ai — Senior 3-D Vision Engineer Redwood City, CA | Sep 2017 – Jun 2021

- Invented a fiducial-marker scan-to-BIM alignment system that detects circular and rectangular markers in 2-D projections of 3-D LiDAR scans to match them with surveyed control points; granted as US11348322B1. Cut manual alignment time from hours to minutes and unlocked near real-time progress monitoring on active construction sites.
- Evolved the pipeline into HALT (Horizontal Alignment using Level-Tops), exploiting the natural flatness of concrete floors to register mobile-LiDAR sweeps to CAD models without markers, removing most hand-tweaking on typical floors.

• Led the deviation-detection module that compares aligned scans against design models to surface clashes and automate progress billing.

Google ATAP — Computer Vision Engineer Mountain View, CA | Feb 2016 – Mar 2017

- Prototyped a real-time multi-image-stitching pipeline for a confidential Snapdragon-based camera device (C++, OpenCV), informing sensor-tuning decisions for the hardware team.
- Implemented on-device visual search using a Bag-of-Visual-Words index to reconnect sessions after camera interruption; validated in live field tests and prepared for hand-off to the productization group.

Samsung Research America — Senior Research Engineer Mountain View, CA | Oct 2009 – Jul 2015

- Conceived the handwriting-based channel-entry UI for Samsung's 2013 Smart-TV touch remote.

 Recruited a visual designer and front-end engineer to build a high-fidelity prototype and partnered with a UX researcher who ran the user study that won executive approval.
- Led core software for the touch-remote concept end-to-end—porting prototypes to production C++,
 integrating with TV firmware, and coordinating launch on 30 million-plus sets worldwide. This broader
 work on the touch-remote platform earned 3 U.S. patents and Samsung's "Outstanding Achievement"
 award.

Earlier Roles (details on request):

• ICT/USC – Computer Scientist (VR for PTSD; Best Paper award) 2003–2009

EDUCATION

PhD, Computer Science — Keldysh Institute for Applied Mathematics, Moscow. Dissertation: Algorithms for Automatic Visual Inspection.

Patents & Publications (most cited)

- "Dynamic Text Input via On-/Above-Surface Finger Sensing," first inventor, US 9,430,145 (2016) 43 citations
- "VR Exposure Therapy for Iraq-War PTSD," co-author (lead VR software), IEEE VR 2006 77 citations; deployed in 20+ VA clinics

SELECTED OPEN SOURCE

Creator, "Cubie" Al voice assistant for the Google AlY Voice Kit V2 (Python). Raspberry Pi Zero software delivers multimodal interaction: RGB-LED emotion cues, voice-tone modulation, multi-LLM back-ends, persistent memory, and self-improvement loops—designed for safe, family-friendly use.