# Nikhil Ganpat Navghade

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## Radar System & Algorithm Engineer | Radar R&D | Signal Processing | System Integration

### Professional Summary


T-shaped Radar Systems Engineer with 10+ years of experience in radar algorithms, system design, and prototype-level development. Strong specialization in FMCW signal processing, 1D–4D FFT pipelines, MIMO/DOA estimation, and antenna modeling, combined with system-engineering skills for integrating and validating complete radar chains. Experienced in MATLAB-based concept development, model evaluation, and early-phase R&D for new radar architectures. Brings cross-functional collaboration experience with algorithm, system, hardware, and firmware teams across full R&D cycles.


### Core competencies

- **Radar Signal Processing**: FMCW, Pulse Radar, range–Doppler–angle estimation
- **Radar Algorithms**: CFAR, noise estimation, Doppler artifact removal, sidelobe suppression, clustering, ambiguity resolution
- **MIMO & Beamforming**: azimuth/elevation, HRT-based elevation, antenna performance evaluation
- **ADAS Radar Systems**: Gen5/Gen6 automotive radar platforms, 4x4 corner radar
- **System & Software Architecture**: radar processing chain design, dataflow, I/O structures
- **Programming**: MATLAB/Simulink, Embedded C, C (MISRA), C++ (basic), Python (basic)
- **DSP & Embedded**: TI AWR2944, Calterah Alps-Pro, TS201, BF561, multi-core optimization
- **Tools**: Trace32, Visual Studio/VS Code, VDSP++, Jira, Confluence, Git, CI/CD
- **Architecture Tools**: HP DOORS, Enterprise Architecture tools, Draw.io
- **Soft Skills**: technical leadership, module ownership, training & mentoring

### Experience

#### Calterah GmbH — FAE & Technical Sales (Sept 2024 – Present)

- Performed system-level debugging across the full radar pipeline (ADC sampling to angle estimation).
- Analyzed system behavior, resolved ~90% of customer-reported performance issues, and validated algorithm-hardware interactions.
- Solved 5+ critical system blockers including OTP programming, Secure Boot enablement, FuSa configuration, and Ethernet driver behavior.

Conducted technical workshops and knowledge-transfer sessions to improve developer onboardings.

- Represented radar technology at Electronica 2024, demonstrating system concepts to industry partners.
- Collaborated with cross-functional R&D teams (Europe–China) to refine system requirements and feature implementations.

### Fusionride GmbH — Senior Radar Signal Processing Engineer (Feb 2022 – Sept 2024)

- Architected complete radar processing chain (1D–4D FFT, MIMO, beamforming) in MATLAB.
- Designed multi-core system architecture with optimized memory/runtime performance.
- Built antenna performance evaluation tools (beam patterns, sidelobes, virtual array checks), reducing analysis time from 1 week to 1 day
- Delivered first 4×4 corner radar prototype within 1 year and contributed to 6×8 front radar design.
- Led technical decisions for algorithms, architecture, and module integration.

### Continental Automotive — Technical Specialist Radar (Jul 2018 – Feb 2022)

- Achieved 99.92% functional coverage for Gen5 radar validation.
- Implemented CFAR, elevation MIMO modules, and sidelobe suppression, noise estimation.
- Developed RPD/RSP modules on ARM M4, DSP, and MATLAB with significant runtime/memory improvements. Supported root cause analysis across DSP/M4 modules
- Defined algorithm architecture and supported system-level optimization decisions.

### Wavelet Technologies — Project Engineer (Jul 2015 – Jul 2018)

Developed firmware for pulse wind profile radar and participated in full lifecycle development.

## Education

- Masters in Embedded Systems & VLSI — Pune University, 2016 — CGPA 8.54/10
- Bachelor of Electronics & Telecommunication — Pune University, 2013 — CGPA 8.43/10

## Publications & Achievements

- IEEE Conference Paper: "Comparative study and implementation …. wind profiler radar", 2017.
- Key Achievement: Pioneered introduction of first 4x4 corner radar product with real-time detections within one year at Fusionride | Received monetary award for developing a tool that significantly accelerated initial RSP bring-up and reduced engineering time

## Languages

English, Hindi, Marathi, German (A1)