

PROFESSIONAL EXPERIENCE

18+ Years

Sr. Engineering Manager | Principal Architect, Lenovo R&D

Engineering leader with 18 years of extensive experience spanning product research, solution development, and technology partnerships.

<p>Career's Highlights</p>	<ul style="list-style-type: none"> Experienced in product research, development and consultancy, adept at assessing technology compatibility and validating use cases. Lead initiatives to shape up Lenovo's engineering teams by cultivating an agile, collaborative & innovative culture through implementation of required tools and processes. Managed tech stack for a \$20M product, driving 15% YoY revenue growth. Established and maintained strategic partnerships with industry giants like Microsoft, Nvidia and AWS, delivered successful partner-led solutions. Proven track record of delivering high impactful and scalable solutions Spearheaded the development of Keysight's breakthrough products such as the BenchVue Platform and Pathwave. Successfully revamped R&D teams, enabling smooth transitions to the latest technology stacks and maximizing productivity.
<p>Roles & Responsibilities</p>	<ul style="list-style-type: none"> Managing India engineering team (Devs, QA and DevOps), and operations, including recruitment, performance management, resource allocation and vendor management. Foster strong internal & external relationships, with a focus on collaboration & client service Leadership alignment while ensuring timely and quality execution of technology roadmap. Responsible for comprehensive project planning including requirements gathering, feasibility/ risk analysis, effort estimation, quality assurance, change management & release management. Facilitation of translating customer requirements into a product definition and architecture. Accountable for technical mentorship and coaching of local product development team. Engaged in customer interactions, usability testing and product discussions for use case validation. Promotion of Agile culture through backlog grooming, prioritization, sprint planning, and stakeholder reviews. Individual contribution to analysis, design, and optimization of major product modules.
<p>Initiatives/ Papers</p>	<ul style="list-style-type: none"> Talking to Instrument Smartly. <i>Accepted and presented at Agilent Technical Conference (ATC), SFO, US.</i> Pervasive Electronic Measurement Environment: Introduced mobility in instrumentation. Enhanced customer communication through an integrated feedback mechanism. Evaluated cross-platform tech and open-source initiatives for rapid development at Keysight.
<p>Technology Stack</p>	<ul style="list-style-type: none"> Language: C++, C#, TypeScript, Java Frameworks: Angular, Nodejs, Qt, WPF, WCF, Hibernate, SpringMVC, .Net Framework Cloud Technologies: Azure, AWS Database: MySQL, SQLite, RDS, MongoDB Tools: VSCode, Git, JIRA, Jenkin, npm DevOps: Code Pipeline, Docker, Kubernetes, CI/CD Advanced proficiency in Algorithms, Data Structures, and System Design Concepts: SOA, Microservices, Rest APIs, Operating system, Software Architecture, Networking layers
<p>Trainings/ Certifications</p>	<ul style="list-style-type: none"> AWS Solution Architect (Associate) Microsoft certified professional, Developing Microsoft Azure Solutions. Product Security Yellow Belt Scrum Master, Scrum alliance, Unicom learning.
<p>Awards</p>	<ul style="list-style-type: none"> Lenovo FY23 1H Award: Open-Source Code Compliance Efforts. Key R&D contributor award, Keysight Technologies, 2015 & 2017. Reuse and Leverage Award, Agilent Technologies, 2011 Merit Scholarship Award, Under graduation Studies (NSIT, Delhi University), 2005.
<p>Education</p>	<ul style="list-style-type: none"> M.S. Software System, BITS Pilani (Work Integrated), 2012, 9.2 CGPA. B.E. in Electronics, NSIT (DU), 2005, (73%)

PRODUCTS & RESEARCH UNDERTAKEN

<p>Lenovo R&D (Feb 2019-)</p>	<ul style="list-style-type: none"> ➤ Immersive Learning Experience (VR Classroom) Facilitates seamless integration of virtual reality lessons and field trips for educators, inspiring immersive learning outcomes. Technologies: AWS Cloud, Microservices, MEAN Stack (Angular, Nodejs , No SQL), Unity Engine Role: Sr. Engineering Manager Principal Architect, Lenovo SSG R&D. Accomplishments: <ul style="list-style-type: none"> ▪ Leading engineering efforts in designing, developing, and hosting the solution. ▪ Engaged and led the cross functional interactions with BTIT and IT to support required infra.; incl. Lenovo ID integration, hosting solution architecture on the Lenovo domain. ▪ Collaborated with multiple external partners to manage and execute content on VR headsets. ▪ Established and extended software qualification processes with Unit Tests, UI & API automation. ▪ Ensured quality releases by introducing multiple gates (Code Analysis/ Test Automation/ Vulnerabilities Analysis) in CI/CD pipeline. ▪ Enabled team engagement, focus, motivation, and assisted in reskilling for cloud tech. ➤ ThinkIoT Solution Management Platform Developed in partnership with AWS, provides proactive IoT solution management for global device health monitoring and optimization. Role: Sr Engineering Manager/ Technology Architect, Lenovo Commercial IoT Technologies: AWS Cloud, Microservices Architecture, MEAN Stack (Angular, Nodejs , No SQL) Accomplishments: <ul style="list-style-type: none"> ▪ Assisted in conceptualizing the platform, setting up right infrastructure, maintaining the development standards, and designing micro-service based scalable architecture. ▪ Actively collaborated with partners such as AWS team to evaluate architecture options. ▪ Architecture ready for Multi-tenancy, Data Retention & scalable serverless data pipeline. ▪ Designed infrastructure to connect with partners devices hosted on multiple clouds Google/ AWS/ Azure and private. ▪ Real time Analytics and Alerting on anomalies detection. Automated IoT device diagnostics, integrating ServiceNow to halve manpower needs. ▪ Played crucial role in extending platform from device to solution availability monitoring. ▪ Milestones: AWS Cloud Migration, Serverless Stack, PRC Deployment, AWS FTR, Cost Analysis ▪ Led DevOps/ Operations efforts with team. <ul style="list-style-type: none"> ○ Transformed Infrastructure as a code (AWS CDK) ○ Instituted Jenkins-driven CI/CD pipelines, boosting software deployment efficiency. ○ Designed Rollout strategies (B/G deployments) considering minimum downtime. ○ Established infrastructure and processes for DRP, Security and production incidents. ➤ Digital Distribution Center (Warehouse Automation) IoT solution, developed in collaboration with NVIDIA and Microsoft, enables real-time package detection, tracking, and validation for optimized distribution centre operations. Role: Technology Architect, Lenovo ThinkIoT Technologies: Azure IoT Edge & IoT Central, ML, Containers based services, Nvidia Deepstream, Docker, Edge Computing. Accomplishments: <ul style="list-style-type: none"> ▪ Finalized requirements and scope of work in Collaborations with MSFT and Nvidia. ▪ Designed Azure IoT Edge pipeline, uses multi-video stream analytics with AI and machine learning inferencing to detect, track and validate packages across multiple camera in real time. ▪ Leveraged Nvidia Deepstream to process and analyse multiple video streams
<p>Intuit IDC, (Nov 2018-Feb 2019)</p>	<ul style="list-style-type: none"> ➤ Turbo Tax: Best-selling tax preparation software to file taxes in US & Canada. Technologies: C#, C++, Javascript, Rest APIs; Role: Staff Engineer. Accomplishments: Supported loose coupled communication b/w multiple components
<p>Keysight Technologies (Previously)</p>	<ul style="list-style-type: none"> ➤ PathWave Test Cloud-based solution streamlines product development workflow from design to manufacturing. Technologies: Angular, Node.js, Rest APIs, MySQL, Microservices, Kubernetes. Role: Sr Software Architect, R&D.

Agilent
Technologies)
(Jun 2005 – Nov
2018)

Accomplishments:

- Established cloud-based infrastructure to support multi plugins framework.
- Supported Open, Scalable and High Availability Services.
- Developed test plan management microservice.

➤ **Switch Manager**

Cross-platform solution simplifies creation, visualization, and control of ATE system switching.

Technologies: VS Code, Angular, Node.js, Modern C++, C#, Nan Layer, Mongo DB, Electron, Rest APIs, Open Source: GoJs, GoldenLayout JS, Unit Testing: Jasmine, Karma, GTest

Role: Expert/ Architect, R&D

Accomplishments:

- Established cross platform architecture supports rapid development.
- Developed cross technologies Frameworks: Session Management, Call back Mechanism and Logging framework.
- Evaluated & integrated the nodejs layer with C++ business objects using Nan.
- Auto Switch Route Generation Algorithm.

➤ **BenchVue Framework (Platform)**

R&D evolving concept enabling seamless connection, capturing and achieving results across multiple instruments on PC or mobile device with programming free model for customers.

Technologies: C#, WPF (MVVM Framework), WCF, TFS, REST

Role: Advance/ Staff (Engineer), R&D.

Accomplishments:

- SDK: Facilitated external developers to create applications for BenchVue Framework, promoting independent app releases.
- App Store: Enabled users to buy, install and uninstall any published app independently.
- Streamlined app data flow for heavy instrument data handling and export in suitable formats.
- Developed Data Manager for logging/export, enabling diverse apps to export synchronized data in various formats.
- REST APIs seamlessly integrate customer feedback into Agile development backlogs.
- Engineered: Automation/Sequencer module; Undo-Redo framework; Simulation mode
- Researched and prototyped the concept for Bench Tab for multiple instrument accessibility.
- Prototyped iPhone/iPad app and investigated its communicating with server on json protocol.

➤ **Desktop Waveform Editor**

Multithreaded desktop application allows editing waveforms using DSP operations.

Technologies: Visual Studio, C#, TFS, MATLAB, Xml, Win Forms, Chart FX

Role: Sr. Software Engineer (R&D)

Accomplishments:

- Proposed XML-based solution for command execution across multiple instrument families.
- File operations: Handled various waveform data in the application.
- Chart Control: Handled Zoon-in, Zoom-out, Pan Zoom, decimation, Auto scale
- Decimation framework: handled large amount of data on thumbnail views/graph
- Licensing: Implemented algorithm for PC based Evaluation & Full Licensing.