

# Louis Byun

Senior Software Systems Engineer | Embedded Systems • Platform Software • Automation

Austin, TX, USA

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## PROFESSIONAL SUMMARY

Senior Software Systems Engineer with **20+ years of experience** designing, building, and operating **mission-critical software systems** across embedded platforms, Linux-based services, and cloud infrastructure.

Specialized in **system architecture, monitoring and control software, reliability engineering, and HW/SW integration**, with a career spanning wireless systems, automation platforms, and large-scale production environments. Proven technical leader with deep experience translating real-world operational constraints into robust, scalable software solutions.

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## CORE TECHNICAL SKILLS

- **Systems Engineering:** Architecture, reliability, availability, failure handling, upgrade strategies
  - **Embedded & Low-Level Software:** BLE, Wi-Fi, GPS, RTOS, firmware, HW bring-up
  - **Platform & Backend Development:** Python, Flask, REST APIs, PostgreSQL
  - **Linux & Cloud Infrastructure:** Docker, AWS, Nginx, server administration
  - **Automation & Diagnostics:** RPA, system instrumentation, monitoring, MTTR reduction
  - **Networking Fundamentals:** Protocol behavior, routing concepts, distributed systems
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## PROFESSIONAL EXPERIENCE

### Senior Software Engineer

Zinnotech (Samsung Austin Semiconductor) — Austin, TX

Sep 2024 – Present

- Designed and deployed **software automation and monitoring systems** supporting large-scale semiconductor manufacturing operations.
- Served as **technical owner** for software workflows, ensuring operational stability, availability, and SLA compliance.
- Built **real-time diagnostics and visualization dashboards** using Splunk SPL to analyze logs, events, and system behavior.
- Performed **Windows system-level analysis and reverse engineering** (Win32 APIs, message handling) to stabilize critical internal tools.

- Developed **PowerShell and Python automation scripts** integrated with backend services for centralized execution and control.
- Supported secure enterprise environments including VDI operations, access control, and incident response.

**Technologies:** Python, PowerShell, Win32 API, Splunk, Automation Anywhere, Windows, Linux, Flask

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## Principal Software Engineer / Platform Architect

**Personal Engineering Projects** — Austin, TX

*Jan 2025 – Present*

- Architected and operated **always-on software platforms** requiring continuous monitoring, fault handling, and recovery.
- Designed modular backend systems using **Python (Flask)** with structured logging, health checks, and secure authentication.
- Built **containerized Linux services** using Docker, Nginx pipelines.
- Developed **data processing and analytics pipelines** for scientific and domain-specific datasets.
- Implemented role-based access control and operational dashboards for real-time system visibility.

**Technologies:** Python, Flask, PostgreSQL, Docker, Linux

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## Principal Software Engineer / System Administrator

**Orange Digit Inc.** — Seoul, South Korea

*Sep 2012 – Feb 2024*

- Designed and validated **AI-based machine vision systems** for manufacturing partners using Python, Docker, and PyTorch.
- Integrated robotic control systems, backend services, and messaging infrastructure (MQTT).
- Managed **cloud platforms and backend architectures** supporting enterprise and public-sector customers.
- Led cross-functional teams of **10–20 engineers**, delivering 40+ production systems.

## Technical Field Application Engineer

**ST-Ericsson** — Seoul, South Korea

*Dec 2007 – Mar 2012*

- Supported **mass production and system validation** of wireless platforms (Wi-Fi, Bluetooth, GPS, USB).
- Collaborated with HW and RTOS teams on **system requirements, porting, and debugging**.
- Provided customer-facing technical leadership for platform integration and issue resolution.
- Contributed to a **3G platform generating approximately \$41M in revenue**.

## Senior Embedded Software Engineer

**LG Electronics** — Seoul, South Korea

Mar 2004 – Jul 2007

- Developed **Bluetooth firmware and production test automation** for mobile devices.
  - Performed advanced HW/SW debugging using **JTAG, protocol analyzers, and lab equipment**.
  - Led **bootloader and BSP porting**, hardware initialization, and power management firmware development.
  - Contributed to successful launch of **12 mobile device models** in the European market.
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## **Quality Assurance Manager (Navigation Systems)**

**SK** — Seoul, South Korea

Jan 2002 – Jan 2004

- Led operational quality analysis for a **GPS-based mobile navigation platform**.
  - Analyzed real-world routing data to identify and correct **systemic path calculation errors** (~100 cases/day).
  - Collaborated with development teams to improve routing accuracy, reliability, and service stability.
  - Established data-driven feedback loops for continuous service improvement.
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## **EDUCATION**

**M.S. Computer Engineering** — Ajou University

*Distributed Systems, Mobile Computing, Embedded Systems*

**B.S. Computer Science** — Ajou University

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## **CERTIFICATIONS**

- Automation Anywhere Master RPA Certification
  - Automation Anywhere Advanced Automation Certification
  - Automation Anywhere Business Analyst (Automation 360)
  - Splunk Search Expert 101
  - AWS DevOps Specialization
  - System Administration & IT Infrastructure Services
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## **PUBLICATIONS**

- Bluetooth Low Energy Sensor Networks
- SLIMbus™ for Smart Devices