

Sean Bailey

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SUMMARY

- 4 years of experience in e-commerce, distributed systems, microservices, telecommunications, and education.
- 40% reduction in voice recognition costs, saving \$144,000 annually.
- 40% increase in new business opportunities through a RESTful ToIP Text Service.
- 100% recovery rate for unanswered REST calls, reducing user call drops by 75%.
- 30% NLP improvement by enhanced voice command and exception handling.
- 30% increase in data retrieval accuracy with Regular Expressions.

TECHNICAL SKILLS

Programming Languages: C++, Scala, Clojure, Python, Java, PostgreSQL, SQL, JSON, Shell, HTML

Tools & Frameworks: Linux, Git, Docker, RESTful API, Distributed Systems, Microservices, NLP, Azure, Google Cloud

EXPERIENCE

Novo Labs Inc

Dallas, TX

Software Engineer

Feb. 2021 – June 2023

- Enhanced efficiency and customer satisfaction for 25+ franchises and **5000+** locations with an automated voice-based service for **20,000+** restaurant orders daily. Utilized **Scala**, **Clojure**, **Quill (for SQL)**, and **Circe (for JSON)**. Deployed on **GCP**, integrated voice recognition, synthesis, and **NLP** services from Microsoft **Azure**.
- Reduced voice recognition costs by **40%**, potentially saving **\$144,000** annually, by developing a new **RESTful** audio stream client for Speech Recognition Service on Microsoft **Azure**, using **Scala**.
- Developed a **RESTful** ToIP Text Service channel, resulting in a **40%** increase in new business opportunities, using **Scala**, **Twitter Finagle**, **SQL**, and **Circe**.
- Achieved a 100% recovery rate of unanswered **RESTful API** calls by developing a Retryable Filter for **RESTful** calls within the SMS client, using **Scala** and **Twitter Finagle**.
- Prevented 75% of user call drops by implementing an order resuming capability feature, using **Scala**, **SQL**, and **JSON**.
- Reduced response time by 50% with **load balancers** for voice synthesis, using **Scala** and **Twitter Finagle**.
- Developed a hash string generator to efficiently map orders and services, enabling shortened URL payment applications, using **Scala** and **SQL**.
- Lowered **NLP** failures by 30%, improved various voice command handling, and enhanced exception handling using **Scala**, **unit tests**, **integration tests**, and **regression tests**, leveraging insights from error logs in **Datadog** and **Grafana**.
- Improved data retrieval accuracy by 30% for address parsing, using **Scala** and **Regex(Regular Expressions)**.
- Improved UI sections and implemented keyboard shortcuts for testing webpage UI, using **Clojure** and **HTML**. Achieved a 30% increase in testing efficiency.
- Managed **Kubernetes** cronjobs, and optimized loading efficiency by **10%** through **YAML** and **JSON**.

CodePro Education

Taichung, TW

Software Engineer

Dec. 2019 – Dec. 2020

- Reduced assessment time by 75% and eliminated human assessment through an Online Judging system deployed on Microsoft **Azure**, using **Python**, **Django**, **PostgreSQL**, **Redis**, and **Linux Shell**.
- Saved 56 hours per week and reduced operational costs by 33% by automating **Docker** container processes using Linux **Shell** scripts.

Free5gc department of NCTU

Hsinchu, TW

Back End Engineer

Jul. 2019 – Nov. 2019

- Developed a verification system to validate JSON messages in 5G core network, reducing validation time by 70%, using **TTCN-3** and **C++**.
- Identified and resolved 15 critical issues in the 5G core network, using **Wireshark**, **C++**, **Postman**, and **CURL**.
- Enhanced AMF network function responsiveness by refactoring 1000+ lines of code, using a combination of **C** and **C++**.
- Reduced testing time by 50% with simplified Git usage and process launching using Linux **Shell** scripts and **MAKE** files.

Ministry of Transportation and Communications TW & NCTU

Taipei, TW

Embedded System Engineer

June 2016 – Sep. 2016

- Developed an embedded system for data reading from taxi meters, reducing data loss by 90%, using **Arduino** and **C++**.
- Developed a data retrieval system, improving data completeness by 95%, using **VBA**.
- My product was produced 50+ times, and collected and processed 10,000 GPS data points from 1000+ taxis.

EDUCATION

B.S., Computer Science | National Chiao Tung University (NCTU)

Hsinchu, TW | **2018**