Jan Szczekulski

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Summary

Software engineer with 4+ years of experience designing and building distributed systems, including cloud-native user and internal-facing platforms. Main experience in distributed frontends and backends, event-driven architectures, migration frameworks, high-throughput APIs, and operational tooling. I take pride in ownership and forward-thinking approach to engineering and scalability

Experience

Amazon — Seattle, USA

Software Development Engineer Apr 2025 – Present
Software Development Engineer Intern Jun 2024 – Sept 2024

- Led redesign and deprecation of a 17-year legacy Tier-1 distributed configuration platform handling **10M+ daily requests** across **200+ global fulfillment sites**, consolidating fragmented schemas and services into unified DynamoDB-backed APIs with zero production downtime.
- Designed and implemented large-scale migration infrastructure including schema redesign, migration tooling, double-read/double-write validation frameworks, staged traffic shifting, rollback mechanisms, and production monitoring for a migration of a Tier-1 distributed backend.
- Developed distributed backend services and APIs in **Java/Spring** using **DynamoDB, ECS, Lambda, SQS, SNS, Kinesis, AWS SDKs, and CI/CD tooling** while articulating and driving tradeoff decisions between scalability, operational robustness, fault-tolerance, blast radius minimization and separation of concerns between subsystems.
- Owned operational reliability for 3+ Tier-1 production systems including deployment pipelines, rollout procedures, dashboards, alarms, incident response, load testing, and production migration coordination.
- Resolved critical European-wide production incidents by identifying transient distributed in nature bugs, and introducing frameworks and safeguards across 3+ Tier-1 services to avoid and detect these issues.
- Designed and shipped 3 key features across 8+ different systems, earning/saving estimated 450 million per year. Features were focused on reducing manual intervenation required and scaling across more sites. Such as auto-login feature, new type of datacenter support or specific workflows for handling new kind of items.

UCSD — San Diego, USA

Graduate Research Assistant @ Contextual Robotics Institute Sept 2024 – March 2025
Teaching Assistant Jan 2025 – March 2025

- Co-author and co-lead implementer of a state-of-the-art robotic tabletop rearrangement system published at **ICRA 2025**, focusing on long-horizon planning and robust execution under physical-world's uncertainty.
- Built planning systems integrating vision-language models and large language models for mobile manipulation and multi-step reasoning tasks.
- Helped prepare study resources and provided office hours as well as seminars for a Search and Optimization course

The Hut Group (THG) — Manchester, UK

Software Engineer Dec 2021 – Aug 2023
Data Scientist Sept 2020 – Dec 2021

- Designed and implemented experimentation infrastructure integrating an in-house A/B testing backend with a high-throughput widget delivery platform serving **5k+ RPS**.
- Built backend APIs, integration services, rollout tooling, and React-based frontend systems enabling rapid experiment configuration supporting real-time configuration updates, feature exposure logic, and analytics collection in large-scale e-commerce systems contributing to **£150M+ YoY business impact**.
- Designed and implemented backend integrations between experimentation systems, widgeting services, and analytics platforms using **TypeScript, Python, SQL, React.js, and MVC-based architectures**.
- Built SQL and Python pipelines for experiment evaluation, statistical analysis, and operational analytics across millions of daily events.
- Managed production infrastructure including Kubernetes clusters, deployment pipelines, VM provisioning, patching, and operational maintenance.

Publications

OmniManip: Towards General Robotic Manipulation via Object-Centric Interaction Primitives as Spatial Constraints
ICRA 2025
– Co-author; contributed to long-horizon robotic planning, manipulation systems, and LLM-assisted embodied AI reasoning.

In Search for Optimal Schedule During Long-Term Treatment of Port-Wine Birthmarks
Scientific Reports
– Co-author; applied machine learning and statistical analysis methods to medical outcome prediction from imaging datasets.

Education

University of California, San Diego — San Diego, USA
M.S. in Computer Science, GPA: 3.85 — 2023 – 2025

University of Liverpool — Liverpool, UK
B.Sc. (Hons) Computer Science & Mathematics, First Class — 2017 – 2020

Technical Skills

Languages: Java, C, Python, Go, TypeScript, SQL

Cloud & Infrastructure: AWS ECS, AWS EC2, Lambda, DynamoDB, SNS, SQS, Kinesis, AWS CDK, Docker, Kubernetes

Frontend: React.js, javascript, MVC Architectures

Data Systems: A/B testing Platforms, Statistical Analysis, Data Aggregation Systems

Backend & Distributed Systems: Spring Boot, REST APIs, Distributed Systems, Data Migration, Reliability Engineering, API Design, High-Throughput Systems

ML & Research: PyTorch, Vision-Language Models, Large Language Models, Robotics Planning Systems