

Christian Ryan

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WORK EXPERIENCE

Senior Machine Learning Engineer @ Voi Technology

Jan 2022 - Present

Been working as an end-to-end senior machine learning engineer within growth and product analytics teams at Voi Technology – the largest tendered micromobility operator in Europe. Some of my most notable projects, consisting of full-scale development and productionisation, have been the following:

- Computer vision-based automated parking review – 1 MEUR impact per annum

Developed and productionised a computer vision-based ML model using TensorFlow to classify parking quality of scooters in real time to reduce parking fines, manual USO reviews and optimise the fleet operations.

- Smart pricing – 2.6 MEUR impact per annum

Utilised historical A/B tests to consolidate a dataset of user-level price sensitivity to build an uplift model using sklift to optimise our pricing strategy.

- Churn prediction modelling – 500 kEUR impact per annum

Developed a classifier to predict the likelihood of a customer churning within the coming 90 days for retention efforts leveraging the company's CRM tool.

Machine Learning Engineer @ Capgemini

Jul 2021 - Jan 2022

As a consultant, I contributed to the development of a comprehensive machine learning platform that streamlined the entire data science lifecycle for Bayer AG, one of the world's largest pharmaceutical companies. This platform was built on Kubeflow and was hosted on an AWS EKS cluster, allowing for seamless management and scalability, thanks to a rigid testing framework through our GitLab CI/CD deployment workflow. Within a quarter after deployment, we successfully hosted 20+ ML projects on our Kubeflow cluster.

Data Scientist @ LeoVegas Group (MGM Resorts subsidiary)

Jan 2019 - Jul 2021

Work consisted of developing and maintaining a lifetime value prediction model alongside an algorithmic approach to customer relationship management. The latter leveraged the results of my M.Sc. dissertation, see the appendix, and consisted of training a DQN to learn how to best interact with an artificial environment built from DNNs trained on customer interaction data.

ENTREPRENEURIAL VENTURE

Co-Founder & CTO @ SatoriML

Jan 2023 - Present

Co-founded and run a business with ex-colleagues to design, develop, and host custom RAG-based LLMs for non-profit organizations and institutions. We specialized in creating solutions tailored to non-profits' specific data needs with an emphasis on data privacy and data localization. We provide end-to-end services from initial design and development to hosting and maintenance, ensuring that non-profits can leverage

advanced AI capabilities to enhance their operations and outreach. The tech stack that our product is based on leverages LangChain, Pinecone, OpenAI and AWS.

EDUCATION

'14 - '19 M.Sc. in Electrical Engineering at **KTH Royal Institute of Technology** (GPA: 4.5/5.0)

2018 Study abroad programme at **Monash University** in Melbourne, Australia

2017 Erasmus exchange studies at **TU Wien** in Vienna, Austria

2015 Summer exchange studies at **Dalian University of Technology** in Dalian, China

TECHNICAL SKILLS

Skills: Python (Tensorflow, Xgboost, Scikit-learn, Sklift), SQL, Bash, dbt, Tableau, Metabase.

Technologies: GCP (Vertex AI, GCS, Looker), AWS (S3, EKS, Lambda), Airflow, Docker, GitHub Actions, GitLab CI, Kubeflow, Kubernetes, Snowflake.

NOTEABLE SIDE PROJECTS

Data Analyst as a Service

Developed and implemented a chatbot integrated into Slack at Voi, leveraging LLM advancements to democratize data access for non-technical colleagues. Trained a fine-tuned version of the davinci base model by OpenAI on prompt-completion pairs, enabling natural language prompts to generate JSON queries to our Metrics layer. This innovation significantly boosted the productivity of central analytics teams by offloading elementary data queries to the chatbot.

Experimentation tracking framework

Established a ways of working regarding experimentation at Voi by automating the calculations of statistical significance for A/B tests in UX, CRM and product. This initiative introduced a central registry to document and track various experiments conducted within the organization. The automated reports were presented in a centralized experimentation dashboard, where stakeholders could access critical metrics and insights. The framework improved the accessibility of experimentation data, allowing business stakeholders, including developers and product managers, to draw insights from launched experiments without the need for data analytics. The implementation of this approach streamlined the experimentation process, resulting in increased productivity and efficient decision-making.

PUBLICATIONS

Ryan, C. (2019). "On Optimization of Sequential Decision-Making in Customer Relationship Management using Deep Reinforcement Learning" (Dissertation). URL: <http://urn.kb.se/resolve?urn=urn:nbn:se:kth:diva-261711>.

Nobliá, M., Ryan, C. (2017). "Contamination Event Detection in Water Distribution Systems" (Dissertation). pp. 11-19. URL: <http://urn.kb.se/resolve?urn=urn:nbn:se:kth:diva-214698>.