JON-PAUL BOYD

Intelligent Systems Engineer

I thrive on delivering tangible, cutting-edge, AI-enabled and analytic solutions that inform, empower & perform. I help solve business challenges and deliver value to all stakeholders through strong theory, experienced hands-on, clarity of thought and communication.

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SUMMARY

- **25 years I.T. experience** as a software engineer, technical solutions architect & development team lead, designing solutions & executing to delivery into production for data-driven decision making.
- **23 LinkedIn recommendations** from providing client-centric expertise to 37 global companies.
- Graduated as **Master of Intelligent Systems, with distinction**, from De Montfort University, Leicester, U.K. (2017-2021).
- **Extensive experience** modelling, cleansing, mining, & visualizing large data collections, including on cloud platforms.
- **4 years experience applying machine learning, deep learning, & heuristics** to real-world problems including customer churn, breast cancer tumour classification, & manufacturing optimization.
- **Extensive natural language processing experience**, building & evaluating state-of-the-art language models for highly relevant retrieval of biomedical information, topic modelling, named entity recognition, & pattern matching.

CAREER HIGHLIGHTS

Advanced Analytics Specialist
AC Immune | Lausanne, CH | 2020 – 2021

Driving scientific & business impact on a 6-month contract, leading ACI's first exploration of cloud-hosted data management, machine & deep learning technologies to advance their data-driven agenda. Learned value of human-in-the-loop evaluation of A.I. solutions.

- **Automated tracking & visualization of the highly dynamic COVID-19 vaccine landscape** for informed decision making. Clinical trial knowledge aggregation from multiple sources using Airflow & Azure ML platform pipelines, with persistence into an Azure PostegreSQL database for dashboarding & reporting with Power BI & Streamlit.
- **Prototyped knowledge base supporting time-pressured researchers with more effective information retrieval** using large academic literature collection (400K coronavirus papers). Airflow & Azure ML pipelines automate corpus ingestion & cleansing. Heuristics & topic modelling for metadata extraction & document clustering. ElasticSearch for 4.7M paragraph repository. Fine-tuned BERT-based neural network search strategies calibrated to COVID-19 for more relevant results. Streamlit with Python for web front-end.
- **Proven ability to engage with different stakeholders,** working with biomedical researchers to understand their workflow, & presentations "*An introduction to NLP for biomedical research*" to the scientific community & solutions to the CSO & CEO.

SAP HANA Technical Architect
Nestle | Vevey, CH | 2014 – 2017

Technical lead, inspiring team implementing groundbreaking analytics solution. Empowered 3000 users with recipe search to answer regulatory compliance, quantity & procurement questions previously impossible. Learned I'm still hungry for technical challenges.

- **Resolved SAP product shortcomings**, developing tool for analytic privileges build & assign, enabling project go-live.
- **Quantified performance**, developing tool measuring query times vs KPIs for user experience/expectation mgmt.
- **Acquired new skillsets** to configure HANA workload management, HALM & HRF, then shared with team.
- **Formalized SAP HANA development best practices** for Nestle application development group.
- **Executed 5 HANA major upgrades** & migration of analytics sidecar to embedded NetWeaver/HANA dual stack.

SAP HANA Technical Architect
Bluefin Solutions | London, UK | 2014

Helped BAT realise Gartner's Logical Data Warehouse concept by implementing HANA SDA for data federation of London & Sydney databases. Learned trust won on transparency & keeping delivery promises goes a long way.

- **Developed new P&L**, achieving sub-second performance (legacy 2m10s), SAP Fiori KPI dashboard with item drill-down.

SAP HANA Technical Architect
HANA Propulsion Laboratory | Blonay, CH | 2013

Learned HANA by engineering piloted vehicle, with real time telemetry to cloud-hosted dB for analytics & vehicle control via openUI5 cockpit. Realised benefits of deep & wide research.

- **Developed data mining for game analytics & reward system** tied to mission objectives & pilot behaviour.

SAP Web Dynpro ABAP Consultant
Nestle| Vevey, CH | 2010 – 2013

Revitalized team, solving skillset deficit, & guided complex dev, problem-solving & upgrades. Learned greater self-belief & improved interpersonal skills through learning from others.

- **Redesigned recipe change documents** with new concept driven by simplicity, familiarity & customisation.
- **Cultivated offshore dev capability** with technical training.

SAP ABAP Consultant
Belgian Railways| Brussels, BB | 2008 – 2010
Mobilized to successfully guide & rescue a failing technical project integrating RF scanning into warehouse management shipment handling. Learned love of OO dev & software in physical systems.

- Individually responsible for complex bespoke development functionality within logistics execution.

Senior SAP ABAP Consultant
Cap Gemini| Middlesbrough, UK | 2000 – 2008
Analysed customer systems from ABAP perspective to enable the smooth transitioning into SAP competency centre flagship nearshoring service. Demonstrated technical & client-facing capability by delivering additional revenue earning on-site consultancy & training. Learned rewards of coaching juniors.

- Supervised 3 ABAP developer colleagues, managing work pipeline and continuous coaching.
- Innovated systems integration monitoring dashboard.

EDUCATION

Masters Intelligent Systems
De Montfort University | UK | 2017 – 2020
Discovered why stronger partnerships should exist between enterprise and academia.

- **Masters Thesis Project (90%)**
  Addressed 2 objectives: **Support decision-making** with timely & highly visual summarisation of the COVID-19 vaccine development landscape. **Support time-pressured researchers** with more effective information retrieval. Designed, developed & deployed a cloud-hosted knowledge base of coronavirus research & vaccine clinical trial information. Automated orchestration of high-volume structured & unstructured data aggregation, cleansing, classification, metadata creation & persistence. Automated state-of-the-art BERT-transformer model calibration to complex COVID-19 semantics & embedding of paragraph text sequences into ElasticSearch. Highly visual exploration & search with Streamlit. Search results outperformed PubMedCentral as evaluated by a medical expert.

- **Applied Computational Intelligence (88%)** Predicting customer behaviour with tree-based machine learning classifiers. Extensive Python with data profiling & preparation, unsupervised & supervised machine learning, overfitting protection, hyperparameter tuning, model scoring, evaluation & selection.

- **A.I. Programming (80%)**
  NLP Python NLTK context-free grammars for natural language to SQL database query.

- **Data Mining (80%)**
  Data analysis & machine learning to predict risk indicators for cardiovascular disease.

- **Neural Networks (80%)**
  Evaluation of biomass & classification of network activity (intrusion, attack, normal).

- **Fuzzy Logic (94%)**
  Classifying breast cancer tumours with fuzzy inference, outperforming neural networks. Authored paper submitted to journal *Applied Soft Computing* for publication.

- **Research Methods (96%)**
  PhD proposal for augmented analytics.

- **Mobile Robots (97%)**
  Virtual search & rescue robot controlled via Python, implementing obstacle avoidance, sensor data fusion, environment mapping, precision navigation, victim location.

- **Computational Intelligence Optimization (100%)** Design & build of Python-based hyper-heuristic optimization platform to address the real-world problem of scheduling optimisation. 5 example nature-inspired metaheuristic algorithms are implemented. A hyper-heuristic feature dynamically switches between low-level metaheuristics to deterministically use the most appropriate algorithm according to current problem state, or select one stochastically.

TOOLS

Machine Learning & Deep Learning: regression, decision tree, random forest, boosting, classification, clustering, neural networks
Heuristics: regular expressions, annealing, genetic, evolution, swarm, hyper
Programming & scripting: Python, JavaScript, SQL, Pandas, Numpy, spaCY, Scikit-Learn, Keras, NLTK, HTML/CSS3, SAP ABAP
Database: PostegreSQL, MySQL, MongoDB, ElasticSearch, SAP HANA
Cloud: Azure Machine Learning, blob store, compute clusters, networking, security, keyvaults, container registries
Frontend: Power BI, Streamlit
Other: Docker, Linux, GitHub, Apache Airflow, Jira

PRAISE

"Tech savvy, experienced, meticulous, dependable, ingenious & eager to learn more"
Rudi Dutli, Principal, Infosys Lodestone

"Builds comprehensive understanding of architectures involved, educating & inspiring teams & co-workers in the process. A real flair for challenging, on-the-edge development"
Trond Stroemme, Team Lead, SAP App Expertise Centre, Nestle

"An expert in his domain, a great team player. His focus on results with optimal quality is outstanding"
Norbert Rignall, Master Data Solution Architect, Nestle

AWARDS

- Microsoft Certified Azure Fundamentals

- AWS Certified Cloud Practitioner