MATHIJS DE BRUIN

BACKEND SOFTWARE ENGINEER, SYSTEMS ARCHITECT, DEVOPS ENGINEER, DATA SCIENTIST

CONTACT

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🐙 https://github.com/dokterbob,
Full CV: https://dokterbob.github.io/cv/

📍 Portugal

TECHNICAL SKILLS

Programming languages
Python, C/C++, TypeScript, JavaScript, Java, Shell scripting, Go, Rust (limited experience),

Frameworks/stacks
Django, Flask, Express.js, Vue.js, Apache Cordova

Databases
Elasticsearch / OpenSearch, PostgreSQL (PostGIS), MySQL, InfluxDB, MongoDB

Scientific toolkits
Mathematica, MATLAB, NumPy/SciPy, Jupyter, matplotlib

AI and Machine Learning
langchain, scikit-learn, NLTK, PyCV, pytorch (limited experience)

Version control systems
GIT

Continuous integration
Gitlab, Jenkins

Operating systems
FreeBSD, macOS, Linux (Ubuntu, Gentoo, Slackware, Debian), TrueNAS

System administration
Ansible, Grafana, InfluxDB, Docker Compose, MySQL, PostgresSQL, Redis, Postfix, Nginx, Memcached, Fabric, Amazon EC2, S3 and CloudFront, RabbitMQ, MongoDB

Embedded platforms
PlatformIO, Arduino, ESP32, Raspberry Pi

CORE COMPETENCES

Technical Mastery: Passionate about **Python**, **Django**, **AI**, **Go**, **TypeScript** and **Elastic/OpenSearch**. Specialized in **scalable systems**, **data engineering**, and **CI/CD**.

Leadership & Communication: Proven team leadership using **agile methodologies**. Effective communicator across multiple disciplines, mentoring roles, and flexible work arrangements.

Innovation & Strategy: Thought leader in **Web3** and **decentralized technologies**. Active contributor to **open-source** initiatives and recipient of innovation awards

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WORK EXPERIENCE

June 2010 - now
Freelance systems architect/consultant
Consulting, implementation, advice and workshops concerning software architecture, scalability, API design, data modelling and best practises for web development and other applications.

May 2018 - June 2019
Mentor at Code Institute
Supporting students into becoming full stack software engineers.

Dec 2011 - Jan 2022
Software Architect at Visualspace
Developing interactive, complex and scalable applications for mobile and web with a strong awareness of design, user perspectives and team collaboration.

June 2001 - Dec 2011
Senior Developer at Visualspace
Design, documentation and implementation of web applications using Django, Zope and Apache Cocoon. System administration (FreeBSD, OS X and Linux). Release of first Open Source project (web statistics combining SQL, PHP and C).

April 2000 - Nov 2001
Web Developer at PICADIA
Construction of websites (HTML, CSS and JavaScript) from design concepts.

FOUNDING ROLES

June 2016 - June 2023
Inventor and founder of ipfs-search.com
Maintaining and running the first search engine for the decentralized Interplanetary Filesystem (IPFS) based on OpenSearch and Apache's Tika, deployed through Ansible.

Feb 2013 - Jan 2022
Co-founder of Visualspace Cooperative
Having worked for years at Visualspace, I initiated the transformation of our company into a cooperative, of which I now am a member.

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EDUCATION

Sept. 2004 - Sept. 2010
University of Amsterdam, BSc Physics

Special interests: the interpretation of quantum mechanics, quantum gases, energy and climate studies and experimental particle physics.

Bachelor's thesis: characterisation of a magneto-optical trap using a CCD and imagine processing in MATLAB. Licensed as GPL.

Sept. 2005 - Sept. 2010
University of Amsterdam, BA Philosophy

Special interests: philosophy of science, philosophy of language, philosophy of mind, logic and semantics.

Bachelor's thesis: formulation of a conceptual framework for understanding time in physics (see below).

1997 - 2003
Mendelcollege Haarlem,
VWO (Pre-University Education)

Equivalent to A-Levels/AP, focused on nature & technology.

Graduation thesis: physical modelling of wave interference patterns, including GUI, developed in C++. Licensed as GPL.

LANGUAGES

Dutch	native
English	fluent
Portuguese	advanced
German	intermediate
Spanish	beginner
French	beginner

INTERESTS

Agroforestry and climate resilience. Philosophy (of science, language and mind). Circular and collaborative macro- and microeconomics. Travelling and hospitality. Meditation, yoga and introspection.

PROJECT PORTFOLIO

Genuine or counterfeit
2015 - 2021

De Nederlandsche Bank (The Dutch National Bank)
Banque de France (French National Bank)
Multilingual, multiplatform (iOS, Android) mobile application able to check the validity of Euro bills using smartphone camera's by employing Computer Vision technology. Developed using web technology with Apache Cordova.

ETL architecture
2016 - 2017

Quetru
Architecture, design and construction of a big data analysis and enrichment system with a very low cost of operation.

Microgrid architecture
2015 - 2016

Metabolic
Architecture for an electrical microgrid research pilot for Schoonschip, the most sustainable floating neighbourhood in Europe. The pilot has since been realised.

LocalBitcoins
2013

LocalBitcoins Oy, Helsinki (Finland)
Implementation of fraud detection and analysis (using machine learning), asynchronous messaging, general scalability and security improvements.

Workshop:
Programming for
non-programmers
2014, 2017

TechInc in Amsterdam
Date with Data in Porto
Two-part workshop introducing non-programmers to the nature of computers and their programming.

Workshop:
Scientific Python
2014

The WSL Institute for Snow and Avalanche Research, SLF in Davos
Three-day workshop in advanced scientific Python programming with a focus on terminal usage, interactive Python, best practises, modular programming, version control and project structure.

Project Bluebottle

1%CLUB
Kick-starting a fully Open Source rewrite of one of the first crowdfunding NGO's in the world using Django.