George Attia

Software Engineer · DevOps and ML infrastructure

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gitlab.com/georgeattia



Key competencies

Languages: C#, Python, PHP, SQL, JavaScript, C/C++, Unix shell

Tools: GitLab CI, Docker, Kubernetes, AWS, GCP, BigQuery, MS SQL Server, MySQL, PyTorch, .NET, Git

Areas: CI/CD, ERP systems, data pipelines (ETL), REST API design, test automation, deep learning, hardware security

Professional experience

Software Engineer, ISO-Chemie GmbH, Aalen

Jan 2026 to present

- Built customer-level multi-currency invoicing for EU customers outside Germany, so they can pay in euros or their local currency.
- Added exchange-rate handling across invoices and pro forma invoices: rate fetching, rates frozen through the document chain, gross amounts and updated report templates.
- Modernised and stabilised the deployment of several software components with GitLab CI.
- Develop and support the company's internal ERP and business software, from application logic to reporting and operations.

C#/.NET, MS SQL Server, Crystal Reports, GitLab CI

Research Assistant, Barkhausen Institut gGmbH, Dresden

May 2025 to Dec 2025, part-time

- Built PyTorch pipelines that preprocess ChipWhisperer power traces, train CNN models and evaluate key recovery for deep-learning side-channel attacks.
- Designed multi-head and separate-network CNNs for fixed-key and variable-key datasets of the DIZY stream cipher.
- Wrote my master's thesis there and co-authored a paper published at CASCADE 2026.

Python, PyTorch, NumPy, ChipWhisperer

Software Consultant, Synergiq Communities Inc., Toronto (remote)

Jul 2021 to Apr 2025

Formerly Synergiq Solutions Inc. Full-time until Oct 2022, then part-time.

- Built Python ETL pipelines from MySQL into Google BigQuery that power the product's analytics dashboard.
- Helped design, test and document the main product's REST API.
- Developed a user data deletion cycle to meet privacy requirements, plus reporting and data-quality features in PHP and SQL.
- Ran Kubernetes cron jobs, container scanning and cron monitoring, and automated GitLab variables and local configuration.
- Led QA for feature releases, upgraded the internal Rocket.Chat deployment and led an evaluation of business-intelligence vendors.

Python, PHP, MySQL, BigQuery, GCP, Kubernetes, Docker, PHPUnit, Testim

Systems Engineering Intern, Middle Egypt Electricity Distribution Company

Jun 2020 to Sep 2020

- Trained on grid maintenance, fault handling and SCADA monitoring and control in a production utility.

Publication

A Multi-head CNN-based Side-channel Attack on the Energy-efficient DIZY Stream Cipher

George Attia, Martin Schmid and Elif Bilge Kavun. CASCADE 2026, Regensburg. Springer LNCS, volume 16532, pages 345–364. DOI 10.1007/978-3-032-25149-7_15

- First deep-learning side-channel attack on a small-state stream cipher like DIZY; a multi-head CNN with a shared backbone predicts the full 160-bit internal state.
- Recovered up to 11 of 32 two-bit key groups in the upper 64 key bits, with as few as 514 traces on average.

Education

M.Sc. Artificial Intelligence Engineering, University of Passau

Apr 2024 to Feb 2026

Grade 1.9

M.Sc. Computer Science, University of Passau

Oct 2022 to Aug 2025

Grade 1.9

B.Sc. Computer and Systems Engineering, Minia University, Egypt

Sep 2016 to Aug 2021

Major in digital control and automation

Projects

Deep-learning side-channel pipeline for DIZY (2025): gitlab.com/georgeattia/dizy-dl-sca

Global electricity consumption dashboard (2024): D3.js, gitlab.com/georgeattia/data-visualization

miniHive, a SQL to MapReduce compiler (2022/23): Python, Luigi

E-learning web app for control systems (2021): Django, bachelor's project

Languages and certificates

English: C1 (IELTS) · **German:** B2 (telc) · **Arabic:** native

Algorithmic Toolbox, UC San Diego (2020)