



Cristian Di Iorio

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Nationality: Italian

EDUCATION AND TRAINING

[17/09/2024 – Current]

Master's Degree in Computer Science

Sapienza Università di Roma

City: Rome | Country: Italy | | Level in EQF: EQF level 7

[27/09/2021 – 19/12/2024]

Bachelor's Degree in Computer Engineering

Sapienza Università di Roma

City: Rome | Country: Italy | | Level in EQF: EQF level 6

LANGUAGE SKILLS

Mother tongue(s): Italian

Other language(s):

English

LISTENING C1 READING C1 WRITING C1

SPOKEN PRODUCTION C1 SPOKEN INTERACTION C1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

PROJECTS

AWS Blog App Deployment and Testing

Designed and deployed a scalable, fault-tolerant three-tier web application on AWS using Flask for a blog platform supporting image uploads. Implemented a secure multi-AZ infrastructure with EC2 instances managed by an Auto Scaling Group, an Application Load Balancer, and a Multi-AZ RDS PostgreSQL database. Integrated S3 for image storage and set up bastion/tester hosts for secure access and performance evaluation. Developed step-scaling policies based on CloudWatch alarms to dynamically respond to traffic surges. Performance tested with Apache JMeter under heavy and light workloads, achieving zero error rates across millions of transactions and showcasing effective scaling behavior and responsiveness.

Link: <https://cristiandiiorio.it/assets/pdf/cloudcomputing-report.pdf>

Automated Detection of Security-Sensitive UI Elements

Designed a three-stage pipeline to automatically identify and tag security-sensitive UI widgets for Clickshield. Proposed using UI-CTX for static code analysis to construct UI Handler Graphs, applying a Graph Neural Network for binary classification at the graph level, and defining automatic code-level annotations to guide runtime overlay protection.

Link: <https://cristiandiiorio.it/assets/pdf/dns-report.pdf>

Keystroke Dynamics Recognition

Created a comparative study of three statistical keystroke-dynamics authentication models: Gaussian Mixture Models, Mahalanobis-distance classification, and Gunetti-Picardi distance metrics. Evaluated their performance (FAR, FRR, EER) on hold-time, up-down-time, and down-down-time features extracted from the Aalto, Buffalo, and

Nanglae-Bhattarakosol datasets. The results, visualized via ROC curves, highlight the trade-offs of each approach in distinguishing genuine users from impostors.

Link: <https://arxiv.org/pdf/2502.16177>

Arduino Current Meter - Bachelor's Thesis

Developed a low-cost current monitoring system by integrating an Arduino ATmega2560 with a Hall effect sensor. Calibrated the sensor's readings via least-squares regression against multimeter measurements, implemented an ADC sampling routine using timer interrupts on the Arduino and wrote a C-based Linux receiver to collect and display the data. Implemented a containerized receiver and a simple web interface with Docker to provide real-time monitoring and ensure reproducible deployment.

Link: <https://cristiandiiorio.it/assets/pdf/bachelor-thesis.pdf>

HOBBIES AND INTERESTS

Homelabbing and Selfhosting