

Patryk Ruciński

Senior Software Engineer

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Phone 696-555-402
Date of birth 1996

2020-07- present

Freelance Software Engineer

CodiCrypt

Realized projects:

- Computer Vision System for public transport vehicles. I Implemented a system that recognizes and tracks passengers using Deep Neural Networks. I was able to successfully develop an application that counts the number of passengers in a multi-camera environment in a vehicle. The project was implemented under fighting the COVID-19 pandemic.
- I Implemented a full-stack web application that saves hundreds of hours yearly of security analysts' work time. The web application for threat profiling and modeling is based on Mitre Att&ck Framework(Django, React.js) – The application automates the analysis of enterprise IT environments. It shows filters and types, and prioritizes possible attack techniques. The application recommends necessary security mechanisms to implement altogether with SIEM rules.
- Go Ahead Mobile Application – I Implemented a mobile application that helps mentally disabled people to educate themselves. Users can learn from lessons and quizzes in image and text forms. The Supervisor can see the user's results of the quiz. I led a team of designers and Flutter Developers.
- Roadrunner App – Developed a backend for the PoC of product delivery mobile application <https://runningtheroad.ca>
- <https://codicrypt.com> webpage
- All References: <https://codicrypt.com/clients>

2021-02- 2022-06

Software Security Engineer

CloudBest

- I was conducting audits, penetration tests, and code reviews of blockchain applications(wallets, nodes, pools, gambling and marketing platforms, smart contracts).
- I was able to detect about 20 unique true positive critical vulnerabilities and 80 high vulnerabilities. I also improved the SDLC process so that the number of vulnerabilities was greatly reduced during the software development process.

2021-03 - 2021-05 **Senior Python Developer**

Ing Bank

- Developing New Core Banking System – I was responsible for creating a secure credit system (credit accounts, credit transactions) in Python.

2020-08 – 2021-03

Analyst/Software Developer in CERT Team

ComCERT

- Implemented multiple scripts for automation of CERT security analysis mainly scrappers and alert senders.
- Analyzed samples of simple malware (key-loggers, harvesters) using dynamic and static analysis.

2020-03 – 2020-05

Junior C++ Developer with QML

Usecrypt S.A.

- I have migrated custom cryptographic library from C to C++ and detected and mitigated multiple vulnerabilities ranged from low to critical including.

2019-12 – 2020-03

Intern Developer C++/QML

Usecrypt S.A.

- Fixed dozens of bugs 😊

Education

2017-10 - 2021-02

Warsaw Military University of Technology, Warsaw

Bachelor of Engineering, Cryptology and Cybersecurity – Cryptographic Systems
Engineer's Thesis: Analysis and implementation of two-factor authentication mechanism with face recognition

Skills

- Proficient in C++(C++11/14/17, STL, Qt/QML, GoogleTest, OpenGL, WinAPI)
- Excellent knowledge of Cryptology (protocols, asymmetric/symmetric cryptography, quantum cryptography)
- Excellent knowledge of software security
- Proficient in JavaScript(React.js, Next.js)
- Knowledge of Rust and Solidity
- Proficient in Python (OpenCV, Keras API, SageMath, Django, FastAPI, Flask)
- Proficient in AWS Cloud and GCP
- Good knowledge of Java
- Knowledge of development tools(hardhat, GIT, Docker)
- Knowledge of SQL
- Knowledge of malware analysis and developing custom malware
- Knowledge of good programming practices and principles (TDD, design patterns, DRY, SSDLC)

Hobby/University Projects

Cryptographic algorithms implementations

Implementations of symmetric key algorithms(DES, AES, SIMON), public key algorithms(NTRU, GGH, RSA, DH), factorizing algorithms (quadratic sieve, Rho-Pollard), and algorithms that solve discrete logarithm problem(Shanks, Pohlig-Hellman, index method). Implementations made for FPGA, Android, and CPU devices.

Lorenz Machine Simulator

UE4 Application that simulates and visualizes Lorenz Cipher Machine operations

APT Software

The tool serves as a trojan, backdoor, and spyware. The tool uses low-level attributes of the WinAPI interface along with WinSock. Also, there was implemented a server in Python that is used as C&C.

Two factor authentication mechanism with face recognition

The system is designed in a client-server architecture that is used for two-factor authentication. There were implemented cryptographic protocols using symmetric and asymmetric algorithms, digital signatures, and PBKDF2 functions that allow secret data transfer. Implemented security mechanisms based on Neural Networks and Deterministic Algorithms that defend from face spoofing

The Pacman

The Pacman with A* algorithm made in Java

Courses and contests

- PCAPP – Certified Associate in Python Programming – 04.2022
- PCPP1 – Professional Certified Python Programmer. 09.2022
- Mensa - IQ within top 3% of the population - certified (128 IQ in Wechsler scale)

Languages

English – certified (Cambridge English Advanced Certificate)