Dr. Francisco Romero-Hinrichsen

SECURITY & CLOUD ARCHITECTURE · DEVOPS & SOFTWARE ENGINEERING

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I hold a PhD in Applied Mathematics and I am specialized in optimization, software engineering, cybersecurity, and cloud architecture. My mathematical foundation and my analytical skills, drive my passion for crafting robust, secure, and scalable systems. Leveraging cloud frameworks, I consistently contribute to the development of cutting-edge secure solutions that meet the ever-changing demands of the IT landscape. After more than 4 years in the academia and 6 years of professional experience in the field, I cofounded PrimeFaktor IT Solutions GmbH, a cybersecurity consulting company specialized in cloud and hybrid solutions.

Experience

Co-Founder & Cybersecurity Architect   *Vienna, Austria*
PRIMEFAKTOR IT SOLUTIONS GMBH   *March 2024 - Now*

- Security architecture on corporate level encompassing: IAM, PAM, PIM, XDR solution based on MS Defender XDR, SIEM, global logging solution based on ELK stack, Network Access Control (NAC), Vulnerability Management, among other topics.
- Holistic IAM concept work for a hybrid infrastructure consisting of on-premise and cloud resources, as well as safety critical OT equipment.
- Training material development on application security for security champions of an application development team.
- Client-side encryption strategy development for confidential document handling.
- Threat modeling with development team for Mission and Business critical applications in the Energy/Financial sector
- Backup and Recovery concept and development for business applications
- Identity and Access Management assesstment and hardening of internal applications in a multi-cloud environment consisting of MS Azure and AWS
- Design and Implementation of a Secure Software Development Lifecycle on Agile environment
- Design and setup of CI/CD pipeline, with inbuilt security, on corporate level (SecDevOps)
- Design and setup of automated security scanning in Azure DevOps with GitHub Advanced security on .Net, Python, Node applications & Terraform with Trivy

Software Engineering & Cloud Security   *Vienna, Austria*
EMTENSOR GMBH   *2021 - 2024*

- Development of requirements for the company's core software.
- Project planning for Research and Development projects.
- Design and implementation of IT architectures tailored for the development and research teams. These included the setup of adequate cloud resources, and the implementation of a secure access to them.
- Coordination of internal R&D team and external partners, in multiple projects including phantom design and manufacturing, and medical image segmentation with clinical partners.
- Provisioning of Azure resources with infrastructure as Code (IaC) through Terraform.
- SecDevOps workflow setup with Sonar Cloud for automated code quality and security
- General IT administration including network connectivity setups, access and management of diverse Azure resources and Microsoft 365 administration.
- Setup of Azure App Registration and OAuth2.0 authentication for development of internal tools.
- Work towards the improvement of the company's IT security posture by taking care of role-based access control and privilege access management.
- Design and development lead of a platform for double-blinded evaluation of medical images, implemented in C# and React.js, hosted in Azure, with persistence realized via Azure SQL server and secured with OAuth2.0 authentication through Azure Entra ID enabling Multifactor Authentication (MFA).
- Development of core C++ routines for generation of images in the DICOM standard, required as output for a medical imaging device for FDA compliance.
- Sharepoint Lists management and integration with python codebase for authenticated manipulation of testing data.
- Implementation of Power Automate workflows for workflow automation, automated data processing and report generation for our experimental data.
- Development of signal analysis and correction routines in python and C++. Further extensions of these tools into an interactive Jupyter notebook, updating the company's data analysis tools.
- React.js development for OHIF DICOM viewer extension, together with user-authenticated requests to an Azure Storage Account hosting critical DICOM data.

Assistant Professor (title in Austria: "Univ.-Ass.")   *Graz, Austria*
University of Graz   *2018 - 2021*
- Development of a python based solver for dynamic imaging of microbubbles in the bloodstream with ultrafast ultrasound imaging.
- Application containerization with Docker.
- Container Orchestration with Azure Kubernetes Services (AKS) for scalabiality
- Securing the application (CVE scanning for container images, Kubernetes secrets for injecting sensitive data into pods, secure configurations, authentication and authorization).
- Parallelization of algorithms with CUDA.
- Speaker in multiple international applied mathematics conferences and organization within them.
- Teaching of master and bachelor level courses on numerical computation and optimization.
- Bleeding-edge research on optimization methods.

Consulting   *Biel, Switzerland*
Ziemer Ophtalmic Systems AG   *2020 - 2021*
- Consulting on the development of novel methodologies for eye scanning.
- Work together with Dr. Fabian Müller, Clinical Research & Application

Education

PhD in Applied Mathematics   *Zürich, Switzerland*
ETH Zürich   *2018*
- Completed with distinction.

Master degree in Mathematics   *Paris, France*
Université Paris-Sud   *2015*
- Completed with distinction.

Mathematical Engineering Degree   *Santiago, Chile*
Universidad de Chile   *2014*
- Completed with distinction.

Awards

Scholarship for Master studies   *Paris, France*
Fondation mathématique Jacques Hadamard   *2014*
- Covered the transfer to Europe as well as one year income.

Certifications

Microsoft Certified: Azure Administrator Associate (AZ-104)
Microsoft
- Issued January 2024.

Skills and Competences

Social Skills
- Team player with a positive attitude that motivates people in the workplace.
- Natural skill working together with people of different backgrounds, cultures and levels of seniority.
- Innovative mindset, always looking forward to improve, update and optimize processes.
- Strong presentation skills worked through conference presentations and teaching in academia.
- Analytical thinking and problem-solving attitude.

Technical Skills

- Holistic knowledge of cloud services and cloud security, with administration experience in Azure.
- DevOps and CI/CD pipeline implementation via Azure DevOps and Gitlab CI.
- Identity and Access Management (IAM) and Privileged Access Management (PAM).
- Threat modeling and security assessment in the cloud.
- Experience with Docker containerization and sound knowledge of Kubernetes for orchestration of containers.
- Planning, designing and implementing security controls for cloud applications (Azure, AWS, and GCP).
- Hands on development experience in multiple programming languages and frameworks (C#, .NET, Python, React, C, C++, SQL, ...).
- Mathematical expertise in optimization, coupled with comprehensive understanding in the broad domain of applied mathematics.

Languages

English	Full professional proficiency
German	Conversational level
French	Conversational level
Spanish	Mother tongue