

David Zech

Software Security Engineer

(916) 532-4427
david@davidzech.com

EXPERIENCE	COMPANY	ROLE	PERIOD	LOCATION
	Apple, Inc	<i>Senior Software Security Engineer</i>	June 2020 – Present	Cupertino, CA
		<ul style="list-style-type: none">Core contributor and architect for Private Cloud Compute subsystem of Apple Intelligence. Designed and implemented remote attestation and verifiable software transparency solutions to securely and privately offload Apple Intelligence requests to Apple's data centers, and authored several sections of the Private Cloud Compute Security Guide¹.Lead developer of the CloudAttestation framework², the critical component that ensures the privacy and security guarantees of Private Cloud Compute by managing the entire lifecycle of Secure Enclave Processor based attestation payloads. Written in Swift and shipped in iOS 18 and macOS 15.Developed the Apple Transparency Log auditing features for the Private Cloud Compute Virtual Research Environment which ships in all macOS 15+ installations, allowing security researchers to verify the state of the Transparency Log with local copy of the append-only Merkle Tree.Added the ability to unlock Macs with FileVault enabled over the network with Apple's fork of OpenSSH, allowing FileVault to be enabled by default on new macOS install which vastly improves the protection of customer data at rest.Added a new Secure Enclave Processor key type to facilitate hardware bound, encrypted cache filesystem volumes. This enabled Apple Silicon based servers to cache sensitive data such as large language models and build artifacts.Project lead for TPM Authority, a key residency attestation service for Trusted Platform Modules certified for use within Apple. Bootstraps hardware backed cryptographic identity for over 1 million x86 servers.		
	Uber Technologies, Inc.	<i>Software Engineer II</i>	November 2019 – June 2020	Palo Alto, CA
		<ul style="list-style-type: none">Built the uProtect Licensing Services, a collection of in-house public key infrastructure services to provide external clients and devices short-term network access credentials. Enabled Uber ATG's fleet of self-driving cars to connect and authenticate to Uber's edge network securely over mutual TLS.Developed SecComms, a crypto-as-a-service middleware toolkit that lets developers easily adopt message level encryption with hardware-backed cryptographic identities in C++ and Go projects.		
	Sylabs, Inc	<i>Software Engineer</i>	March 2019 – October 2019	Remote
		<ul style="list-style-type: none">Architected and developed an on-premise version of Sylabs Cloud with single-click deployments to major Kubernetes offerings such as AWS EKS, RedHat OpenShift, and Minikube.		
	Intel Corporation	<i>Software Development Engineer</i>	June 2015 – February 2019	Folsom, CA
		<ul style="list-style-type: none">Led the teamwide switch from Java to Go as the primary programming language for their Trusted Executing Technology products.		
SKILLS	Languages: Go, C/C++, Objective-C, Rust, Swift, Java, Python, C#, Typescript, Javascript Technologies: Kubernetes, gRPC, Protobuf, Temporal, Grafana, Telegraf, Prometheus, Pytorch, scikit-learn, pandas, numpy, iOS/macOS SDK, .NET Framework, MongoDB, PostgreSQL, MySQL, HTML5, CSS, Node.js.			
EDUCATION	University of California, San Diego B.S. Computer Science GPA: 3.8			2014 - 2018
LINKS	<ul style="list-style-type: none">[1] https://security.apple.com/documentation/private-cloud-compute[2] https://github.com/apple/security-pcc/tree/main/CloudAttestation			