

“Kevin Gni”

bringing trust & privacy from research labs to your smartphones

loquy.com — bin.ni@cispa.de — or send me a message on LinkedIn ;)

CRITICAL OVERVIEW

Extensive training & research in security & privacy

- Thesis: *Chamade: An application layer framework against traffic analysis for mobile platforms*, advised by Dr. Wouter Lueks, CISPA; ongoing
- Paper: *Wall-e: Smartphone-Based Digital Wallet for Humanitarian Aid Distribution*, with David Pulio et al., CISPA; round 2 @ USENIX 2026
- Contributed to paper: *A Low-Cost Privacy-Preserving Digital Wallet for Humanitarian Aid Distribution*, Luvison et al., CISPA; IEEE S&P 2025
- Extensive research experience on traffic analysis & defence (e.g., website fingerprinting) and privacy-friendly digital wallet/payment schemes such as e-cash and cryptocurrency
- Other fields interested & worked on: side-channel attacks, web security, system/OS security, firmware security, fuzzing

Extensive engineering experience esp. with smartcards & NFC wallets

- Coding from age 14, extensive experience with a wide range of technology stacks, high & low level
- Hands-on and in-depth understanding of modern computer & OS architecture
- 5+ years of experience working with smartcards: both in conventional banking industry and for novel smartphone-based cryptographic applications incl. digital wallet and anonymous credentials
- Solid experience with Rust and other emerging safety & cryptographic facilities
- Proven track record turning ideas into solid, deliverable products

Vision & devotion for digital privacy driven also by personal background

- Witnessed first-hand how mass surveillance and censorship in digital space was used repeatedly across the globe to install fear, exert control, and keep oppressive rulers in position: *lack of privacy can kill*
- Also witnessed the Internet turning into isolated & guarded islands of information: *closedness aids censorship*
- We need solutions that do not allow such censorship *by design* - by leveraging novel cryptographic constructions
- Usability also matters: as a farmer's son, I learnt first-hand how lack of usability prevents laypeople from adopting many current privacy-enhancing tools – no one should be deprived of the right to privacy

Compassionate communicator, passionate presenter, citizen of the world

- Worked in group extensively both professionally and academically: good communicator and workplace etiquette
- Charming, witty, and enthusiastic: a good coworker and a good presenter - I know and believe in my work
- Lived/studied/worked in NYC™, Shanghai & Saarbrücken with many people from different trades and background
- Also studied/trained/worked in interactive digital arts, linguistics and (partially) medicine: more than just a geek

EDUCATION

Universität des Saarlandes & CISPA Helmholtz Center

MSc. in Computer Science; Saarbrücken; pending thesis

Apr 2023 - now

New York University

BSc. in Computer Science; BSc. in Interactive Media Arts; New York City & Shanghai

Sep 2014 - May 2018

LANGUAGE PROFICIENCY

English PROFICIENT | C2: IELTS 8.5, Listening 9, Reading 9, Writing 8, Speaking 8 *best o' 2*

Deutsch | kann Alltagsgespräche recht gut verstehen und führen

Shanghainese (Wu) & Mandarin Chinese MOTHER TONGUE

Old English | ever heard of the Exeter riddles?

WHAT CARRIES ON WINGS OVER WIND/
AND WAFTS IN THE ROOF
BRINGS MEN TO THE GROUND/
YOUNG OR ELDER
AND ROBS THEM OFF SPEECH AND MIND?

→ DETAILED CHRONICLE & ANSWER TO THE RIDDLE ON PAGE 2

MAJOR RESEARCH AND PROFESSIONAL EXPERIENCE

Research Assistant (HiWi)

Nov 2023 - now

With Dr. Wouter Lueks at CISPA Helmholtz Center for Information Security

- Traffic analysis technologies and their defences, especially those operating on the application layer (e.g., ALPACA)
- Efficient, compact and shareable e-cash schemes (e.g., Pointcheval's family of divisible e-cash schemes) for real-life use cases (e.g., humanitarian missions with ICRC)
- Privacy-friendly payment/aid-distribution schemes based on oblivious RAM (e.g., PathORAM) & security enclaves
- Implementation of above schemes on both smartcards and smartphones
- Supporting the course *Privacy-Enhancing Technologies*: subjects include secure multi-party computation, private information retrieval, anonymous credentials, homomorphic encryption, differential privacy, etc.

Payment Engineer

Nov 2019 - Oct 2022

Thales China, Shanghai

- Customizing secure card payment solutions based on payment processor standards (e.g., VISA, Master, JCB, etc.) for various banks to support particular features
- Implementing cryptographic and operational routines on specific smartcards
- Supporting, incorporating and deploying secure data processing facilities on premise: for secure exchange and storage of client data, secure key management, and data protection law compliance, etc.

Research Associate & Teaching Assistant

Early 2018 - mid 2022

With Prof. Olivier Marin on reliable distributed systems & operating systems

- Comparative study of ML-driven failure detection algorithm with conventional ones on efficiency and accuracy
- Implementing and benchmarking a distributed/cloud-tailored database for geospatial data based on GeoTrie
- Task orchestration and management on in-house and commercial HPC
- Supporting the courses *Operating System & Distributed Systems*: subjects include OS architecture (e.g., processes and threads, scheduling, memory management, virtualization, etc.); linearizability, distributed memory, distributed ledger, consensus algorithms, fault tolerance and detection, etc.

SOCIAL AND HUMANITARIAN WORK

Research Assistant

Nov 2018 - May 2019

With Prof. Lena Scheen

- Interview with residents of the old city of Shanghai before their houses undergo *Demolition and Relocation*
- Study on the impact of such mass urban relocation on the life of the city's indigenous residents, and consequentially the impact on the city's indigenous language and culture

Preservation of indigenous language & culture

Late 2014 - now

For the preservation of Shanghai's indigenous language and culture

- Developing input methods for Shanghainese and other Wu Chinese on PC and on mobile devices
- Help with the maintenance of an online database of literature and media materials of Wu Chinese, as well as field investigation of indigenous folklores

Community worker

Ca. 2012 - now

For the local queer community & young adults

- Effort to extend more comprehensive sex education to secondary & higher education students: leaflets and educational materials on STIs, use of contraceptives, consent, women's rights, and living with queer individuals
- Volunteer for *Shanghai Pride & Queer and Ally* society at university: supporting solidarity events & panel talks

SKILLS, INTERESTS AND HOBBIES

Digital photography: specialised in portraits w/ EDC incl. Ricoh GR IIIx

Interpreting: consecutive and simultaneous interpretation for private conference and events (en-wuu & en-zh)

Cooking and preserved fish/ham making: village Shanghainese style

Babysitting: proud godfather of a baby astronaut-to-be

Programming: C++; x86 Assembly; Rust; C#; Java, Scala, Kotlin; Python (w/ numpy, pandas, matplotlib, etc.); common UNIX/Linux tools & bash; experience with common IAAS: GCP, AWS, etc.; Gitlab; Smartcard (incl. GlobalPlatform)

Farming (actual, in the field): maize, potato, passionfruit, luffa, chillies, assorted herbs and cornflower, etc.

Digital interactive art installation: conventional and computer-assisted sewing machines, 3D-printing, motion cameras and home/environment sensors, Arduino, woodwork