Hoang Nguyen

Curriculum Vitae

I am interested in doing research in Information Security. My current research topic focuses on computer security, at the level between hardware and software. I am developing a program that synthesizes contracts given a hardware specification. I am also interested in database security, with the emphasis on defining and enforcing privacy and access control rules.

Personal information

Nationality: Vietnam.
Full name: Nguyen Phuoc Bao Hoang
Born June 14, 1996, Man, Single.

Educational background

1. Bachelor of Science, Computer Science (2014–2018)
   Double Degree Program,
   at Vietnamese-German University | Frankfurt University of Applied Sciences.
   Thesis: Critical configurations on the Chip-Firing Games.
   Final GPA: 9.4/10.0
2. Master of Science, Formal Methods (2020–2021)
   Inter-University Program,
   at Universidad Autónoma | Complutense | Politécnica de Madrid.
   Thesis: Intelligent enforcement of Fine-Grained Access Control policies for SQL queries.
   Final GPA: 9.5/10.0

Professional background

1. Intern & Developer at Axon Active Vietnam (2018–2019)
2. Research Assistant at Vietnamese-German University (2019–2021)
   Supervisor: Assoc. Prof. Dr. Manuel Clavel.
   Research area: Model-driven engineering, Model-driven security, Database security.
3. Research Intern at IMDEA Software Institute (2022)
   Supervisor: Dr. Marco Guarnieri.
   Research area: Computer security, Hardware-Software contract, Program synthesis.

Research interest and background

- Information security: database access control and privacy - design and implementation.
- Model-driven engineering: model-driven security, modelling languages and transformations.
- Specification and constraint languages: semantics, formal methods and proof assistants.

Other activities

1. Voluntary Translator at the Vietnamese version of Long Lost Family Program.
2. IT Consultant at Hoịng c - Pharmaceutical & Medical Supplies co, Ltd.
3. Developer of the PAN ASEAN Coalition for Epidemic and Outbreak Preparedness project.

My research

Influenced by my supervisor, my research has been focusing on developing a *model-driven* methodology for enforcing *fine-grained access control* on databases. The related articles/manuscripts are chronologically listed below:

[1] Hoang Nguyen Phuoc Bao, Antonio Garcia-Dominguez, Manuel Clavel:
The TTC 2021: OCL2PSQL Case.
Proceedings of Workshop TTC@STAF 2021. CEUR Workshop Proceedings.

[2] Hoang Nguyen Phuoc Bao:
Intelligent enforcement of Fine-Grained Access Control for SQL queries.
Master thesis. Universidad Autúnoma de Madrid, Spain, 2021.

[3] Hoang Nguyen Phuoc Bao, Manuel Clavel:
A Model-driven Approach for Enforcing Fine-Grained Access Control for SQL Queries.
SN Computer Science, volume 2(5). Springer. 2021.

[4] Hoang Nguyen Phuoc Bao, Manuel Clavel:
Model-based Characterization of FGAC authorization for SQL queries.
Journal of Object Technology. 2020, volume 19(3). 2020.

[5] Hoang Nguyen Phuoc Bao, Manuel Clavel:
OCL2PSQL: An OCL-to-SQL Code-Generation for Model-Driven Engineering.
Proceedings of FDSE: International Conference on Future Data and Security Engineering 2019.
Lecture Notes in Computer Science, volume 11814. Springer. 2019.

[6] Manuel Clavel, Hoang Nguyen Phuoc Bao:
Mapping OCL into SQL: Challenges and Opportunities Ahead.
Proceedings of Workshop OCL@MoDELS 2019. CEUR Workshop Proceedings, volume 2513.
CEUR-WS.org. 2019.

Selected awards and achievements

1. Merit scholarships in Computer Science of the year 2014-2015, 2015-2016, 2016-2017, 2017-2018.
2. German Academic Exchange Service scholarship of the year 2016-2017.
3. Nominee of the Vingroup Graduate Scholarship Program of the year 2022.