Hoang Nguyen

Curriculum Vitae

I am a student researcher in Computer Science and Information Security. My interest lies in developing methodologies for building secure softwares, with the emphasis on access control and privacy.

Personal information

Nationality: Vietnam.
Full name: Nguyễn Phước Bảo Hoàng.
Born June 14, 1996, Man, Single.

Educational background

1. Bachelor of Science, Computer Science (2014–2018)
   Double Degree Programme,
   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 Programme,
   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. Manuel Clavel.
   Research area: Model-driven engineering, Model-driven security, Database security.

Research interest and background

Software 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 Như chưa hề có cuộc chia ly, a Local TV Programme.
2. IT Consultant at Hoàng Đức - Pharmaceutical & Medical Supplies co, Ltd.

My research statement

Influenced by my supervisor, from 2019 to 2021, my research has been centered around developing a *model-driven* methodology for enforcing *fine-grained access control* on databases. The project involves defining a modelling language for specifying access control policies and a transformation function the maps a concrete model of this language into database executable artifacts. Current implementation and optimization are only available for relational databases. My current plan is to define the concept of an adversary and prove that our methodology is *secured* against this type of attack. Furthermore, extension for supporting privacy policies is also included in the plan. The related articles/manuscripts are chronologically listed below:

[1] Hoang Nguyen Phuoc Bao, Manuel Clavel: *Optimising Fine-Grained Access Control Policy Enforcement for Database Queries. A Model-Driven Approach.*
Unpublished paper.

[2] Hoang Nguyen Phuoc Bao, Antonio Garcia-Dominguez, Manuel Clavel:
The TTC 2021: OCL2PSQL Case.
Proceedings of Workshop TTC@STAF 2021. CEUR Workshop Proceedings.
(Accepted for publication).

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

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

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

[6] 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.

[7] 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.