RANDRIANAINA Georges Aaron*

Nationality: Malagasy (Madagascar)
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Research Interests

Build Systems, Incremental Builds, Reproducible Builds, Software Product Lines, Highly-configurable Systems

Education

Oct. 2021–* **PhD student in Computer Science**, *University of Rennes*, France
Grant from the French Ministry of Research and Higher Education (competitive admission process)

2019–2021 **MSc in Computer Science**, *École Normale Supérieure (ENS) de Rennes & University of Rennes*, France
Computer Science Research Curriculum

2016–2019 **BSc in Computer Science**, *University of Lille*, France
Software Engineering Curriculum

Languages

Malagasy: Native **English:** Fluent **French:** Bilingual

Research Experience

Oct. 2021 –* **PhD student**, *DiverSE team, IRISA/Inria Laboratory*, Rennes, France
Working on Incremental and Reproducible Builds of Highly-Configurable Systems

Jul. 2021 – Sep. 2021 **Research Engineer**, *DiverSE team, IRISA/Inria Laboratory*, Rennes, France
Working on Incremental Build Systems for Highly-configurable Systems

Feb. 2021 – Jun. 2021 **Research Intern**, *DiverSE team, IRISA/Inria Laboratory*, Rennes, France
- Subject: Incremental Build of Linux Kernel Configurations
- Supervisor: Pr. Mathieu Acher, Dr. Djamel Eddine Khelladi, Pr. Jean-Marc Jézéquel

Jun. 2020 – Aug. 2020 **Research Intern**, *DiverSE team, IRISA/Inria Laboratory*, Rennes, France
- Subject: Incremental Compilation of Linux Kernel Configurations
- Supervisor: Pr. Mathieu Acher

Nov. 2019 – May 2020 **Research Intern**, *DiverSE team, IRISA/Inria Laboratory*, Rennes, France
- Subject: Uniform Random Sampling on SAT Formula: Application to the Linux Kernel
- Supervisor: Pr. Mathieu Acher

Apr. 2019 – Jun. 2019 **Research Intern**, *Spirals team, Inria centre at the University of Lille*, France
- Subject: Optimization of Python's Energy Consumption
- Supervisor: Pr. Romain Rouvoy

Jan. 2019 – Mar. 2019 **Research Intern**, *CFHP team, CRIStAL, University of Lille*, France
- Subject: Contribution to integro-differential elimination
- Supervisor: Dr. François Lemaire

Service

Conference **PLDI 2025**, *Program Committee*, Artifact Evaluation
MSR 2025, *Junior Program Committee*, Main Track
ICSE 2025, *Program Committee*, Artifact Evaluation
SLE 2024, *Sub-Reviewer*, Main Track
SPLC 2024, 2025, *Program Committee*, Demonstrations and Tools Track
CCS 2024, *Sub-Reviewer*, Main Track

Workshop **VariVolution'23**, *Program Committee*, Main Track

Journal **TOSEM 2022**, *Sub-Reviewer*

Publications

International Conferences

[1] Mathieu Acher, Benoit Combemale, **Georges Aaron Randrianaina**, and Jean-Marc Jézéquel. Embracing Deep Variability For Reproducibility and Replicability. In *ACM Conference on Reproducibility and Replicability (REP)*, Rennes, France, June 2024. ACM.

[2] **Georges Aaron Randrianaina**, Djamel Eddine Khelladi, Olivier Zendra, and Mathieu Acher. Options matter: Documenting and fixing non-reproducible builds in highly-configurable systems. In *Proceedings of the 21st International Conference on Mining Software Repositories*, MSR '24, page 654–664, New York, NY, USA, 2024. Association for Computing Machinery.

[3] Mathieu Acher, Luc Lesoil, **Georges Aaron Randrianaina**, Xhevahire Tërnava, and Olivier Zendra. A call for removing variability. In *Proceedings of the 17th International Working Conference on Variability Modelling of Software-Intensive Systems*, VaMoS '23, page 82–84, New York, NY, USA, 2023. Association for Computing Machinery.

[4] Xhevahire Tërnava, Luc Lesoil, **Georges Aaron Randrianaina**, Djamel Eddine Khelladi, and Mathieu Acher. On the interaction of feature toggles. In *Proceedings of the 16th International Working Conference on Variability Modelling of Software-Intensive Systems*, VaMoS '22, New York, NY, USA, 2022. Association for Computing Machinery.

[5] **Georges Aaron Randrianaina**, Djamel Eddine Khelladi, Olivier Zendra, and Mathieu Acher. Towards incremental build of software configurations. In *Proceedings of the ACM/IEEE 44th International Conference on Software Engineering: New Ideas and Emerging Results*, ICSE-NIER '22, page 101–105, New York, NY, USA, 2022. Association for Computing Machinery.

[6] **Georges Aaron Randrianaina**, Xhevahire Tërnava, Djamel Eddine Khelladi, and Mathieu Acher. On the benefits and limits of incremental build of software configurations: an exploratory study. In *Proceedings of the 44th International Conference on Software Engineering*, ICSE '22, page 1584–1596, New York, NY, USA, 2022. Association for Computing Machinery.

Workshop

[7] **Georges Aaron Randrianaina**. Incremental Build of Linux Kernel Configurations. In *EuroDW 2022 - 16th EuroSys Doctoral Workshop*, April 2022.

Poster

[8] **Georges Aaron Randrianaina**. Poster: Enabling Efficient Exploration of Linux Configuration Space with Incremental Build. In *19th European Computer Science Summit, Edinburgh*, October 2023.

Theses

[9] **Georges Aaron Randrianaina**. Incremental Build of Linux Kernel Configurations. Master's thesis, University of Rennes, France, July 2021.

[10] **Georges Aaron Randrianaina**. Optimisation de l'empreinte énergétique de Python. Bachelor's thesis, University of Lille, France, June 2019.

Teaching

Fall 2023 **Model-Driven Engineering, MSc**, *27 hours at ISTIC, University of Rennes*
In charge of the organization and supervision of the tutorials, lab sessions, and final projects for a group of 10 students

Domain-Specific Languages, 5th year, *16 hours at INSA Rennes (Engineering School)*
Supervision of the lab sessions of a group of 20 students

Fall 2022 **Compilers' course, MSc**, *32 hours at ISTIC, University of Rennes*
Supervision of the lab sessions of 2 groups of 20 students each

Introduction to Object-Modelling, BSc, *32 hours at ISTIC, University of Rennes*
Tutorials for 3 groups of 40 students each

Fall 2021 **Introduction to Object-Modelling, BSc**, *64 hours at ISTIC, University of Rennes*
Tutorials for 3 groups of 40 students each and supervision of lab sessions for 5 groups of 15 students each

Talks

2024 **Options Matter: Documenting and Fixing Non-Reproducible Builds in Highly-Configurable Systems**, *Groupements De Recherche, Génie de la Programmation et du Logiciel (GDR GPL), Strasbourg*, France

2024 **Documenting and Fixing Non-Reproducible Builds due to Configuration Options**, *Free and Open source Software Developers' European Meeting (FOSDEM), Brussels*, Belgium

2023 **Towards Incremental Build of Software Configurations**, *Groupements De Recherche, Génie de la Programmation et du Logiciel (GDR GPL), Rennes*, France

2022 **Smart Building of Software Variants**, *Software Engineering and Language Department's Annual Seminar, IRISA/Inria Lab, Rennes*, France

Volunteering

2023 **GDR GPL Student Volunteer**

2022–2024 **DiverSE Coffee Organizer**

As an organizer, I strive to diversify the discussions by covering topics both within the DiverSE team and beyond. I have invited presenters on various subjects, including Computer Science Education (e.g., a high school teacher), the Free and Open-source Software Ecosystem (e.g., a developer from the Tails OS project), and, of course, Computer Science Research (e.g., academics from various universities).

Misc

2024 **Reproducible Builds Report**

Our MSR'24 [2] paper was mentioned in the Reproducible Builds' Report of February 2024
`https://reproducible-builds.org/reports/2024-02/`

2022 **Accelerating software configuration space study through incremental build**

Our ICSE'22 [6] paper was covered by the online press of the CNRS
`https://www.ins2i.cnrs.fr/en/cnrsinfo/accelerating-software-configuration-space-study-through-incremental-build`