

Alexandre Gbaguidi Aïsse | CV

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🌐 shumpaga

Looking for a **Computer Thesis Subject**

Profile

I have been introduced to academic research during my **Research** specialization at EPITA. It played a key role in my work at Bentley Systems leading me to submit **two patents** [2, 1]. After two years as a Software Engineer, I understood that I have a strong passion for research and I want to do a PhD. I have had some experiences in: **3D Reconstruction, Point Clouds, Graph Theory, Finite-State Machine, Data, Cloud Computing.**

Experiences

- **Bentley Systems – Reality Modeling Team** **Paris, France**
 - *Software Engineer* 3D Reconstruction, Point Clouds, Geometry, Graph Theory Sep 2018 - to date
 - *End-of-studies internship* Optimization, C++, Python, R, SQL, React Feb 2018 - Aug 2018

Improving *ContextCapture*¹ software and its cloud service :

 - Better point cloud support [3] with :
 - An algorithm that determines one or more scanner positions in a point cloud [2],
 - An algorithm that estimates which scanner created each point [1].
 - Complete rewrite of the Job/Task graph mechanism, performance measures.
 - Abstract and converge Cloud/Desktop architectures.
- **LRDE (Research and Development Laboratory of EPITA)** **Paris, France**
 - *Student Researcher* Finite-State Machine, Graph Theory, Model Checking Sep 2016 – Jan 2018
 - Various contributions to Spot²:
 - Improve a SAT-based (Boolean satisfiability) graph minimization algorithm using an incremental approach [5]
 - Add co-Büchi automata support and conversions from other common classes to co-Büchi [4]
 - Add Persistence/Recurrence membership testing of LTL⁴ formulæ using co-Büchi automata
 - Tutorials : help students to quickly master programming notions being seen in lectures.

Education

- **EPITA – Computer Science Research Specialization** **Paris, France**
 - *Graduate school of Engineering and Computer Science* Sep 2013 – Sep 2018
- **Staffordshire University – Semester Abroad** **Stafford, England**
 - *Real-time and embedded systems* Jan 2015 – Mai 2015

Skills

Languages: French (Native), Russian (Native), English (TOEIC 850)
Programming: C, C++, C#, Python, R, Javascript, React, NodeJS, Scala, Java, PostgreSQL, SQLite.
OS: Linux / UNIX, Mac Os X, Windows.
Interests: Education, Audio recording, mix, master, computer-aided music, travels, event planning.

¹ *ContextCapture* is a 3D Reconstruction Software which turns point clouds and/or images into realistic 3D Models.

² Spot is a C++14 library for LTL, ω -automata³ manipulation and model checking: spot.lrde.epita.fr.

³ A variation of finite-state automata which runs on infinite, rather than finite, strings as input.

⁴ Linear Temporal Logic : used to express time-aware conditions. Used in model checking.

Submitted Patents

- [1] Gbaguidi Aïsse Alexandre Novel Cyril. "Assigning each point of a point cloud to a scanner position of a plurality of different scanner positions in a point cloud". Unpublished yet.
- [2] Gbaguidi Aïsse Alexandre Novel Cyril. "Determining One Or More Scanner Positions In A Point Cloud". 20200371214A1. Nov. 2020. URL: <https://patents.google.com/patent/US20200371214A1/>.

Internship Reports

- [3] Gbaguidi Aïsse Alexandre. *Improving Point Cloud Support of ContextCapture : ScanFinder, Point Cloud Visibility and Point Cloud Compression*. Tech. rep. End-Of-Engineering-Cycle Internship Report. Kremlin-Bicêtre, France: Bentley Systems, Aug. 2018. URL: <https://github.com/shumpaga/end-of-studies-internship-report/blob/master/internship-report-alexandregbaguidiaisse.pdf>.
- [4] Gbaguidi Aïsse Alexandre. *A co-Büching Toolbox*. Tech. rep. 1705. EPITA Research and Development Laboratory (LRDE), 2017. URL: <https://github.com/shumpaga/techreports/blob/master/A%20co-B%C3%BCching%20Toolbox.pdf>.
- [5] Gbaguidi Aïsse Alexandre. *Implementation of ω -automata Minimization Techniques in Spot, a Model Checking Library*. Tech. rep. 3rd Year Internship Report. Kremlin-Bicêtre, France: LRDE, Jan. 2017. URL: <https://github.com/shumpaga/spot-internship-report/blob/master/report.pdf>.