

Lennon Chaves

M.Sc. in Computer Engineering, B.Sc. in Computer Engineering

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Manaus, Amazonas - Brazil

Lennon Chaves received the B.Sc. degree in computer engineering and the M.Sc. degree in computer engineering from the Federal University of Amazonas (UFAM), in 2014 and 2018, respectively. He has also studied at Nokia Teaching Institute, which is a technical high school, where he started his career in computer science. His interests are focused on the field of automated testing, model checking, program synthesis, software testing and software engineering.

Previous Employment

- **Software Engineer** **Manaus, Brazil**
CESAR Institute of Innovation *January 2018–Current*
 - Experience with Automated Tests and Software Testing (regression, sanity, interoperability, stress, key performance indicators (KPI)) with bluetooth, sensors, location, wifi and chromecast devices.
- **Software Engineer** **Manaus, Brazil**
Triad Institute *June 2017–December 2017*
 - Experience with Software Development (Android), Agile Testing, Agile Development (Kanban, Scrum), Technical Leadership.
- **Visiting Student** **Oxford, United Kingdom**
University of Oxford *February 2017–March 2017*
 - Development of a MATLAB Toolbox to Support the Synthesis of Digital Controllers Given Physical Plants;
 - Attended the Lecture “Probabilistic Machine Learning: Foundations and Frontiers” - Professor Zoubin Ghahramani (University of Cambridge);
 - International Research Experience: attending meetings in research group;
- **Graduate Student Researcher** **Manaus, Brazil**
Federal University of Amazonas *October 2015–January 2018*
 - Courses attended: Real Time Systems, Digital Signal Processing, Linear Systems, Software and Systems Verification, Probability and Stochastic Process, Mathematical Morphology, Scientific Research Methodology, and Special Studies/Research Activities.
 - Core competencies in Verification of Unmanned Aerial Vehicles, Software and Systems Verification, Software Engineering, Software Testing, and Control Systems;
 - Research in Verification of Unmanned Aerial Vehicles, in order to check design implementations;
 - Experience with MATLAB and Simulink tools, Digital Systems Simulation and Design, implementation of White-Box tests, and Development of Toolboxes to reproduce bugs found;
 - Research in verification of C/C++ Programs via Mathematical Induction, and discrete-time systems as digital controllers and digital filters;
 - Strong Experience with BMC tools as ESBMC, CBMC, CPAchecker, Ultimate Automizer, ESBMC using k-induction, in order to verify in C/C++ Programs properties about arithmetic under- and overflow, pointer safety, memory leaks, array bounds, atomicity and order violations, deadlock and data race;

- Software Developer**

FPF Tech - Fundação Paulo Feitoza

 - Experience with software development in Mobile, Desktop and Web Applications;
 - Involved in projects using technologies as JavaScript;
 - Experience in projects using technologies as Android, Java, Unitary Testing around 1.5 years;
 - Enrolled in a project for industrial automation, using Ladder, Function Block Diagram, PLC Languages;
 - Experience with TDD (Test Driven Development), BDD (Behavior Driven Development) and Git;
 - Experience as Team Leader/Scrum Master in order to coordinate and lead agile culture, sprint delivery, prioritize stories, acceptance criterias, daily meetings, learned lessons, testing activities, reviews and retrospective meetings;
 - Team experience in agile methodologies (agile development, pair programming and agile testing) using Kanban and Scrum.

Manaus, Brazil

December 2013–January 2016
- Software Developer Trainee**

CITS Amazonas

 - Development of Android applications;
 - Support on Database Management (SQL scripts, MySQL workbench management); Front-end development;
 - Support on Exploratory Tests for development team; Support on Technical Reports and Documentation;
 - Experience with Jira, SVN, Android, Java, MySQL, XML.

Manaus, Brazil

May 2013–November 2013
- Test Developer Intern**

INDT - Nokia Institute of Technology/UFAM

 - Participant in a R&D project with partnership between INDT and UFAM;
 - Responsible for testing web applications;
 - Creation of test cases, bug/defects tracking, record steps to reproduce tests, test management and tests regression;
 - Experience in Tests Automation (for Web Applications using Selenium RC);
 - Tools to manage the tests: Bugzilla, Mantis, Testlink, Scrummy, FireScrum and Jira;
 - Framework to automation testing: JUnit and Selenium RC;

Manaus, Brazil

May 2011–July 2012

Education

- Federal University of Amazonas**

M.Sc. in Computer Engineering

Project: Formal Verification Applied to Attitude Control Software of Unmanned Aerial Vehicles

Supervisor: Prof. Dr. Lucas Carvalho Cordeiro

Manaus, Brazil

2016–2018
- University of Oxford**

Visiting Student, Department of Computer Science

Project: DSSynth: Synthesizing Digital Controllers Given Physical Plants.

Supervisor: Prof. Dr. Lucas Cordeiro and Prof. Dr. Daniel Kroening

Oxford, United Kingdom

2017–2017
- Federal University of Amazonas**

B.Sc. in Computer Engineering

Project: ProtectMe: An Android Application to Prevent Domestic Violence.

Supervisor: Prof. Dr. Eduardo James Pereira Souto

Overall GPA: 8.1427

Manaus, Brazil

2008–2015
- Nokia Teaching Institute**

Informatic Technician/High School

Project 1: Automation System to Inventory Control.

Project 2: Desktop Platform to Support on Chemistry Lessons.

Manaus, Brazil

2005–2008

Certifications

- **ISTQB Certified Tester - CTFL**, Certified Tester Foundation Level, License 13-CTFL-02962-BR
- **Certified ScrumMaster - CSM**, Scrum Alliance, License 000383848
- **Spanish Certificate**, Salamanca Idiomas Español, 2017
- **English Certificate**, ICBEU Manaus - Instituto Cultural Brasil Estados Unidos, 2016

Languages

- **English**: Advanced Proeficiency
- **Spanish**: Intermediate Proeficiency
- **Portuguese**: Native Proeficiency

Community Service

- **Liter of Light Brazil** **Manaus, Brazil**
Volunteer
Operations and technology team.
May 2017 - Present
- **AIESEC in Brazil** **São Paulo, Brazil**
National Team Leader
Development of national products to support team management.
December 2012 - June 2013
- **AIESEC in Manaus** **Manaus, Brazil**
Vice President
Responsible for providing local trainings, team buildings and HR management.
January 2012 - December 2012
- **AIESEC in Manaus** **Manaus, Brazil**
Exchange Coordinator
Responsible for preparing and supporting exchange participants.
March 2011 - November 2011

Extra-curricular Activities

- **Campinas State University (UNICAMP)** August 2014 - December 2014
Extension Course in Pattern Recognition and Image Processing
- **FUCAPI** February 2013 - May 2013
Young Talents Project: Trainings in Java Programming
- **Federal University of Amazonas** May 2011 - July 2012
Researcher Student in Software Testing
- **Federal University of Amazonas** August 2010 - July 2011
Researcher Student in Human-Computer Interaction
- **Federal University of Amazonas** July 2009 - July 2010
Researcher Student in Software Engineering
- **Federal University of Amazonas** July 2009 - December 2009
Instructor in Algorithms and Data Structures Course
- **Federal University of Amazonas** January 2009 - June 2009
Researcher Student in Wireless Sensor Network

Publications

1. **Chaves, L.**, Bessa, I., Ismail, H., Monteiro, F., Cordeiro, L., Lima Filho, E. DSVerifier v2.0: A BMC Tool to Verify Fragility in Digital Systems with Uncertainties. In *Journal of Software and Systems*, pp. 1-27, Elsevier, 2018. **(In rebuttal phase)**
2. **Chaves, L.**, Bessa, I., Ismail, H., Frutuoso, A., Cordeiro, L., Lima Filho, E. DSVerifier-Aided Verification Applied to Attitude Control Software in Unmanned Aerial Vehicles. In *IEEE Transactions on Reliability*, pp.

- 1-22, 2018. **(To appear)**
3. **Chaves, L.**, Bessa, I., Cordeiro, L., Kroening, D. DSValidator: An automated counterexample reproducibility tool for digital systems. In 21st ACM International Conference on Hybrid Systems: Computation and Control (HSCC), pp. 253-258, 2018. **(Published)**
 4. **Chaves, L.**, Bessa, I., Cordeiro, L., Kroening, D., Lima Filho, E. Verifying Digital Systems with MATLAB. In 26th ACM SIGSOFT International Symposium on Software Testing and Analysis (ISSTA), pp. 388-391, 2017. **(Published)**
 5. Abate, A., Bessa, I., Cattaruzza, D., **Chaves, L.**, Cordeiro, L., David, C., Kesseli, P., Kroening, D., Polgreen, E. DSSynth: An Automated Digital Controller Synthesis Tool for Physical Plants. In 32nd IEEE/ACM International Conference on Automated Software Engineering (ASE), pp. 919-924, 2017. **(Published)**
 6. Fernandes, P. **Chaves, L. C.** Bonifacio, B. Conte, T. WE QT Tool: Uma Ferramenta de Apoio a Inspeção de Usabilidade de Aplicações Web. In: X Brazilian Symposium on Human Factors in Computer Systems. (IHC 2011). **(Published)**
 7. Gomes, M. Santos, D. **Chaves, L. C.** Castro, A. Vaz, V. Travassos, G. Conte, T. WDP-RT: Uma técnica de leitura para inspeção de usabilidade de aplicações Web. In: VI ESELAW – Experimental Software Engineering Latin American Workshop, 2009, São Carlos. **(Published)** (ESELAW 2009).

Awards

- **Funds to Attend CAV 2017:** Verification Mentoring Workshop, CAV 2017
- **Honorable Mention in the OBI 2006:** Student participant at National Computer Olympiads in 2006
- **National Awards of AIESEC in Brazil:** 1st place in Team Leader and Team Member Experiences Program (Annual Award)
- **National Awards of AIESEC in Brazil:** 1st place in Team Leader and Team Member Experiences Program (Semester Award)
- **National Awards of AIESEC in Brazil:** 1st place in Integrated Experiences Program (Annual Award)

International Conferences

- **Computer Aided Verification** July, 2017
Verification Mentoring Workshop Heidelberg - Germany

Professional Trainings

- Scrum Master, FPF Tech, Manaus, Brazil
- Test Driven Development, FPF Tech, Manaus, Brazil
- Design Patterns, FPF Tech, Manaus, Brazil
- JavaScript, CSS and HTML 5, FPF Tech, Manaus, Brazil
- Exploratory Tests, FPF Tech, Manaus, Brazil
- Software Testing Fundamentals, FPF Tech, Manaus, Brazil
- Android Development, FPF Tech, Manaus, Brazil
- Android Front End, FPF Tech, Manaus, Brazil
- Automated Tests for Android (Robotium), FPF Tech, Manaus, Brazil
- Behavior Driven Development, FPF Tech, Manaus, Brazil
- MVP: Minimum Viable Product, FPF Tech, Manaus, Brazil

Technical and Personal skills

- **Programming Languages:** C, C++, Java, MATLAB;
- **Software Engineering:** Agile, Continuous Integration, Scrum, Version control, Requirements analysis;

- **Software:** Atlassian Suite, Git, VirtualBox, Eclipse, Netbeans, Android Studio;
- **General Business Skills:** Good presentation skills, Works well in a team;
- **Other:** Good soldering and spot welding skills, Can write well organised and structured reports.

Interests

Program Synthesis, Software Verification, Software Testing, Software Development, Agile Methodologies, Embedded Systems, Unmanned Aerial Vehicles, Coaching, Leadership, Project Management, Software Engineering.

References

- Prof. Dr. Lucas Carvalho Cordeiro, University of Manchester, United Kingdom
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- Prof. Dr. Eddie Batista de Lima Filho, Federal University of Amazonas, Brazil
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