

Ricardo Abreu

Curriculum Vitae

Birthdate: September 13, 1983 🇵🇹
Nationality: Portuguese 🇵🇹
Languages: EN, FR, ES, PT 🇵🇹
Phone: *on request (web version)* 📞
Email: ricab@ricabhome.org ✉️
Website: ricabhome.org 🏠
Github: github.com/ricab 🌐

Work Experience

FREELANCER 2016-today

- ▷ Mobile game developer
- ▷ Open source contributions
- ▷ Invest in professional development
- ▷ *C++, Python, Angelscript, Lua*

CERN/UNIVERSITY OF OREGON 2015-2016

- ▷ Software engineer for ATLAS 🌐
- ▷ *High Level Trigger (HLT) Algorithm Integration Coordinator*
- ▷ Interfacing with *Data Acquisition* (DAQ)
- ▷ Development focus, interfacing with operations
- ▷ Large scale computing farms
- ▷ ATLAS *Outstanding Achievement Award*
- ▷ *C++, Python*

CERN FELLOWSHIP 2012-2015

- ▷ Software engineer for ATLAS 🌐
- ▷ Design, development, validation, maintenance
- ▷ Extensive code overhaul and rationalization
- ▷ Multi-level parallelism (farm, rack, node, cpu)
- ▷ Upgrade and commissioning of the HLT
- ▷ *C++, Python*

NAGRAVISION SA (KUDELSKI) 2010-2012

- ▷ Software Engineer for the *R&D* department
- ▷ Digital TV solutions
- ▷ Analysis, design, implementation, reporting
- ▷ *C++, SQL*

CERN/AGÊNCIA DE INOVAÇÃO 2008-2010

- ▷ Portuguese national internship program
- ▷ Multi-processing, multi-threading, inter-process communication, distributed computing
- ▷ Run Control and HLT shifter
- ▷ *C++, Python*

UNIVERSITY OF LISBON 2006-2008

- ▷ *Agent Modeling Laboratory*
- ▷ Computer Graphics, Artificial Intelligence
- ▷ Design and implementation of *IViHumans* platform
- ▷ *C++, Java*

Education

MSC IN COMPUTER SCIENCE (CS) 2007-2008

- ▷ *Informatics Engineering* (direct translation) 🌐
- ▷ *Faculdade de Ciências da Universidade de Lisboa (FCUL)* – Faculty of Sciences of the University of Lisbon 🌐
- ▷ Score: 19.0 (in 20)

LICENTIATE'S DEGREE IN CS 2001-2007

- ▷ *Informatics Engineering* (direct translation)
- ▷ FCUL 🌐
- ▷ Score: 15.3 (in 20)

SCHOOL 1989-2001

- ▷ 12th grade (complete high-school)
- ▷ Score: 17.3 (in 20)

Skills and Competences

KNOWLEDGE OF COMPUTER SCIENCE

- ▷ Specialty: *Software Engineering*
- ▷ Strong understanding of software design, object-oriented and data-oriented paradigms, design principles and patterns.
- ▷ Solid and broad knowledge of CS: algorithms, data structures, operating systems, concurrency, computer graphics, artificial intelligence, networking, distributed systems, security, computation theory.
- ▷ Aptitude for maths and strong foundations: logic, algebra, arithmetic, geometry

PROGRAMMING LANGUAGES

- ▷ Specialties: *C++ '03, '11, '14, '17 (12 years experience); Python (6 years experience)*
- ▷ Others: Java, C, Haskell, Prolog, SQL, Angelscript, Lua

TECHNOLOGIES, TOOLS, AND LIBRARIES

Linux/Unix	Catch	Urho3D
AIX	Unittest	Box2D
Windows	Boost	OGRE3D
Bash	ACE	Eclipse
Csh/tcsh	CORBA	Sublime
GCC	TBB	MSVC
Clang	OpenMP	Doxygen
GDB	Cppcheck	Markdown
TotalView	Clang-Tidy	ℒ _A T _E X
PDB	Coverity	PGF/TikZ
JDB	Travis	Gnuplot
Valgrind	AppVeyor	Git
CMake	Codecov	Hg
CMT	Github	P4
Makefiles	Bitbucket	SVN
CTest	Jira	CVS

Publications

- ▷ The ATLAS TDAQ Collaboration. “The ATLAS Data Acquisition and High Level Trigger system”. In: *Journal of Instrumentation* 11.06 (June 2016), Po6008. [↗](#)
- ▷ R. Abreu (on behalf of the ATLAS TDAQ collaboration). “The upgrade of the ATLAS High Level Trigger and data acquisition systems and their integration”. In: *19th IEEE-NPSS Real Time Conference*. Nara, Japan, May 2014, pp. 1–6. (*Proceedings*) [↗](#) (*Poster*) [↗](#)
- ▷ A. P. Cláudio et al. “A Layered Approach to Animate Intelligent Characters”. In: *Actas do 17^o Encontro Português de Computação Gráfica*. Covilhã, Portugal, Oct. 2009, pp. 121–130. [↗](#)
- ▷ L. Moniz et al. “A Flexible Agent-Based Framework to Control Virtual Characters”. In: *New Trends in Artificial Intelligence. 14th Portuguese Conference on Artificial Intelligence*. Proceedings. EPIA. Aveiro, Portugal: Universidade de Aveiro, Oct. 2009, pp. 391–401. [↗](#)
- ▷ R. Abreu. “IViHumans Platform. The Graphical Processing Layer”. Dissertation (Master’s thesis). Lisbon, Portugal: Departamento de Informática da Faculdade de Ciências da Universidade de Lisboa, Dec. 2008. [↗](#)
- ▷ R. Abreu, A. P. Cláudio, M. B. Carmo, et al. “Virtual Humans in the IViHumans Platform”. In: *Proc. of 3IA 2008, 11th International Conference on Computer Graphics and Artificial Intelligence, in cooperation with Eurographics*. Athens, Greece, May 2008, pp. 157–162. [↗](#)
- ▷ R. Abreu, A. P. Cláudio, and M. B. Carmo. *Desenvolvimento de Humanos Virtuais para a Plataforma IViHumans*. Tech. rep. DI-FCUL TR-07-32. Lisbon, Portugal: Departamento de Informática da Faculdade de Ciências da Universidade de Lisboa, Nov. 2007. [↗](#)
- ▷ R. Abreu, A. P. Cláudio, and M. B. Carmo. “Humanos Virtuais na Plataforma IViHumans – a Odisseia da Integração de Ferramentas”. In: *Actas do 15^o Encontro Português de Computação Gráfica*. (Tagus Park). Porto Salvo, Portugal, Oct. 2007, pp. 217–222. [↗](#)
- ▷ ... around 400 papers as part of the ATLAS and TDAQ collaborations (with roughly 2800 other authors each). [↗](#)

Miscellaneous

OPEN SOURCE

- ▷ `scope_guard` (author) – a modern C++ scope guard that is easy to use but hard to misuse [↗](#)
- ▷ `Urho3D` (contributor) – cross-platform 2D and 3D game engine; e.g. `Stretchable-Sprite2D` [↗](#)

COURSES

- ▷ `tCSC2013` – the 1st thematic CERN School of Computing. Split, Croatia. June 2013. [↗](#)
- ▷ `CS188.1x` – Artificial Intelligence course from UC Berkeley. Online platform edX. 2012. [↗](#)

AWARDS

- ▷ *ATLAS Outstanding Achievement Award*, 2016, “for outstanding contributions to ensuring the integrity of the Trigger for Run 2”. [↗](#)

PROFILE

- ▷ Analytical
- ▷ Abstract reasoning
- ▷ Persistent investigation
- ▷ Incisive problem dissection
- ▷ Systematic problem solving
- ▷ Motivated to learn new subjects
- ▷ Aptitude for formal specifications
- ▷ Technical writing skills
- ▷ Creative
- ▷ Self-teaching
- ▷ Autonomous
- ▷ Methodical
- ▷ Rigorous

ABOUT ME

I am a software engineer with rational and evidence-based thinking. I have expertise in certain subjects and broad knowledge of the various strands of computer science. That gives me the ability to easily learn and master new subjects. I put the best of myself in my work and I work well both autonomously and in team. I aim for optimal solutions, working methodically to achieve them and employing best practices. Still, I balance decisions with practical aspects, measuring success by actual results and avoiding over-engineering. I trust my capabilities but I also have a clear notion that there is always space to keep evolving – and that is one of my main motivations.