Mario Rincón-Nigro

e-mail: mario.rincon.nigro@gmail.com **Phone**: +49 151 11637543
Homepage: http://pikecillo.github.io **GitHub**: http://github.com/pikecillo
ResearchGate: https://www.researchgate.net/profile/Mario_Rincon-Nigro

---

Summary

Software Engineer with extensive experience in the areas of: computer graphics and animation, GPU-computing, high-performance computing, augmented reality, computer vision, digital maps, and automotive navigation systems.

Education

- **M.S. in Computer Science**. University of Houston. Houston, TX. Fall 2012.
  Thesis Title: *"Cost-based Workload Balancing for Ray Tracing on a Heterogeneous Platform"*.
  GPA: 3.83/4.0
- **B.S. in Systems Engineering**. Universidad de Los Andes. Mérida, Venezuela. December 2007.
  Thesis Title: *"Automatic Code Generation in Object Oriented Languages from UML Models"* [1]

Professional Experience

- **Lead Software Engineer - Senior Software Engineer. Here Technologies**. Berlin, Germany. December 2015 - present.
  Technologies and tools: *Scala, Flink, ScalaTest, Kubernetes, Docker, GitLab, C++11, OpenGL, OpenGLES, GLSL, QNX, NDS, Google Test/Mock, Git, Gerrit, Jenkins, Scrum methodology* .
  - End-to-end design and development of a stream processing service for reconciling geograpical data from multiple sources.
  - Development of a batch processing service for LIDAR data.
  - Development of a next generation multi-platform real-time renderer for digital map data.
  - Development of navigation applications for automotive HMIs.
- **Senior Software Engineer. Nokia**. Berlin, Germany. March 2014 - December 2015.
  Technologies and tools: *C++03/11, OpenGL, OpenGLES, GLSL, Java, JNI, Android SDK, Mercurial, Jenkins, Scrum development* .
  - Maintenance of a legacy multi-platform real-time renderer for digital map data.
  - Development of a 3D multi-platform rendering engine for augmented reality applications.
  - Prototyped an augmented reality application for pedestrian guidance.
- **Co-op Engineer (Internship). Advanced Micro Devices**. Sunnyvale, CA. May 2012 - August 2012.
  Technologies and tools: *C++03, WinDbg, GDB, OpenGL, GLSL* .
  - Worked on reproducing, root-causing, and fixing complex software defects in OpenGL drivers for AMD graphics cards.
  - Developed a demo to showcase a technique for stochastic rasterization.
- **Research Assistant. Computer Graphics and Interactive Media Lab at the University of Houston**. Houston, TX. May 2010 - August 2013.
  Technologies and tools: *C++03, Java, JNI, C, Python, Perl, CUDA, CUDA Visual Profiler, OpenGL, OpenGLES, GLSL, OpenCV, PCL, Matlab, Flite, JNI, PHP, R, Qt, Maya* .
  - Investigated applications of GPU-acceleration to make safer straight-access computer-assisted neurosurgical interventions.

[1] Source Code for code generation tool Genna available at https://github.com/Pikecillo/genna

  - Investigated the use of highly realistic face avatars to increase user engagement in instant messaging for mobile devices.
  - Investigated efficient load balancing strategies for ray tracing using multiple GPUs.

- **Teaching Assistant. Department of Computer Science at the University of Houston**. Houston, TX. August 2009 - December 2013.
  - Lectured and graded for the courses: *Algorithms and Data Structures* (Fall 2011, Spring 2012, Fall 2012, Fall 2013), *Game Art and Animation* (Fall 2009), and *Advanced Game Art and Animation* (Spring 2010).

- **Software Developer Engineer. DyR Technologies**. Mérida, Venezuela. December 2007 - December 2008.
  Technologies and tools: *PHP, Ajax, JavaScript, PostgreSQL, Smarty templates, GWT, Perl* .
  - Development of a web-based enterprise project management systems for the Venezuelan oil industry using in-house web framework.
  - Development of a code generation tool for automating the creation of forms, and associated SQL queries, from SQL database schemas.

Publications

- *"GPU-Accelerated Interactive Visualization and Planning of Neurosurgical Interventions"*. **M. Rincón-Nigro**, N.V. Navkar, N.V. Tsekos, Z. Deng. IEEE Computer Graphics and Applications, Jan/Feb 2014, pp. 14-23.
- *"A Text-Driven Conversational Avatar Interface for Instant Messaging on Mobile Devices"*. **M. Rincón-Nigro**, Z. Deng. IEEE Transactions on Human-Machine Systems (THMS), 43(2), May 2013, pp. 328-332.
- *"Cost-based Workload Balancing for Ray Tracing on Multi-GPU Systems"*, **M. Rincón-Nigro**, Z. Deng. ACM SIGGRAPH 2013 Research Poster, Anaheim, CA, July 2013.
- *"Automatic Code Generation from Finite State Machines"*. **M. Rincón-Nigro**, J. Aguilar-Castro, F. Hidrobo-Torres. Computación y Sistemas, 14(4), April 2011, pp. 405-421. (In Spanish)
- *"Improving the Energy-Efficiency of General-Purpose GPU Computing Through Statistical Power Consumption Modeling"*. X. Ma, **M. Rincón-Nigro**, Z. Deng. University of Houston. Technical Report, 2011.

Awards

- Recipient of the 2011-2012 NSMAA Eckhard Pfeiffer-Alumni Scholarship. University of Houston. Houston, TX. May 2011.
- Second Award in the Team Test of the XXIII Venezuelan Mathematical Olympiads. CENAMEC. Caracas, Venezuela. July 1998.
- Honorable Mention in the XXIII Venezuelan Mathematical Olympiads. CENAMEC. Caracas, Venezuela. July 1998.

Miscellaneous Activities

- Paper reviewer for: International Journal of Image and Graphics (2021, 2020, 2013), International Journal of Computer Assisted Radiology and Surgery (2018), CAD/Graphics (2013).
- Represented Universidad de Los Andes in the 10th ACM-ICPC South American Region Programming Contest. Universidad Metropolitana. Caracas, Venezuela. November 2007.
- Represented Universidad de Los Andes in the 9th ACM-ICPC South American Region Programming Contest. Universidad de Oriente, Núcleo Sucre. Cumaná, Venezuela. November 2006.