Miguel Velez

Ph.D. Student in Software Engineering

Carnegie Mellon University
School of Computer Science
Institute for Software Research
✉ *mvelezce [at] cs.cmu.edu*
🕾 *http://www.cs.cmu.edu/~mvelezce/*
in *miguelvelezmj25*

"Premature optimization is the root of all evil" -Donald Knuth

▭ Education

2016 - Present	**Ph.D. Software Engineering**, *Carnegie Mellon University*, Pittsburgh, PA, USA. Advisor: Christian Kästner.
2010 - 2015	**B.A. Computer Science (Physics minor)** , *University of St Thomas*, St. Paul, MN, USA. Summa Cum Laude. Major and Minor GPA: 4.00/4.00. Cumulative GPA: 3.99/4.00. Advisor: Patrick Jarvis. Summa Cum Laude paper: "Current and Future Relationships Between Robots and Humans".

▭ Research Experience

2016 - Present	**Graduate Research Assistant**, *Carnegie Mellon University*, Pittsburgh, PA, USA.
Summer 2015	**Research Intern**, *Massachusetts Institute of Technology*, Cambridge, MA, USA.
2014 - 2015	**Undergraduate Student Researcher**, *University of St. Thomas*, St. Paul, MN, USA.

▭ Industry Experience

Full-time

2016	**Application Developer/Software Engineer**, *Sportradar US*, Minneapolis, MN, USA. Accepted full-time offer. Developed an ETL application using Ruby that provided data for the NFL Radar360 research tool.

Internships

Summer 2018	**Software Engineering Intern**, *Google*, Mountain View, CA, USA. Improved ranking of contact actions in AGSA Suggest.
Fall 2015	**Application Developer/Software Engineer**, *Sportradar US*, Minneapolis, MN, USA. Built a Ruby monitoring application to parse and build Formula 1 feeds.
Spring 2015	**Jr. Application Developer**, *SportsData/Sportradar US*, Minneapolis, MN, USA. Implemented an application to parse and build MLB feeds using Ruby.
2013 - 2015	**Cloud Developer Intern**, *Valtira*, Minneapolis, MN, USA. Developed web applications with Java servlets, AngularJS, and MySQL databases.

Publications

Refereed Conference Publications

[4] P. Jamshidi, **M. Velez**, C. Kästner, and N. Siegmund. "Learning to Sample: Exploiting Similarities Across Environments to Learn Performance Models for Configurable Systems". In *Proc. Int'l Symp. Foundations of Software Engineering (FSE)*. New York, NY, USA: ACM, Nov. 2018. (21% acceptance rate).

[3] P. Jamshidi, N. Siegmund, **M. Velez**, C. Kästner, A. Patel, and Y. Agarwal. "Transfer Learning for Performance Modeling of Configurable Systems: An Exploratory Analysis". In *Proc. Int'l Conf. Automated Software Engineering (ASE)*. Urbana-Champaign, IL, USA: ACM, Oct. 2017. (21% acceptance rate).

[2] P. Jamshidi, **M. Velez**, C. Kästner, N. Siegmund, and P. Kawthekar. "Transfer Learning for Improving Model Predictions in Highly Configurable Software". In *Proc. Int'l Symp. Software Engineering for Adaptive and Self-Managing Systems (SEAMS)*. Buenos Aires, Argentina: IEEE Computer Society, May 2017, pp. 31–41. (23% acceptance rate).

[1] **M. Velez**, J. Sawin, A. Ingerson, and D. Chiu. "Improving Bitmap Execution Performance Using Column-Based Metadata". In *Int'l Conf. Future Internet of Things and Cloud (FiCloud)*. Vienna, Austria: IEEE Computer Society, Aug. 2016, pp. 371–378. (30% acceptance rate).

Miscellaneous

[6] **M. Velez**, P. Jamshidi, C. Kästner, N. Siegmund, F. Sattler, and S. Apel. *White-Box Performance Discovery*. Poster. BRASS PI Meeting. Seattle, WA, USA, Nov. 2017.

[5] **M. Velez** and J. Sawin. *Improving the Efficiency of CHA through Parallelization*. Poster. Inquiry at St. Thomas. St. Paul, MN, USA, May 2016.

[4] **M. Velez** and J. Sawin. *Faster WAH Compression Querying through the Use of Metadata*. Poster. Consortium for Computing Sciences in Colleges Midwest Region. 1st place Discovery Track. Evansville, IN, USA, Oct. 2015.

[3] **M. Velez** and A. Solar-Lezama. *Simpler Implementation of Sketches through Enhanced Expressiveness*. Poster. MIT Summer Research Poster Session. Cambridge, MA, USA, Aug. 2015.

[2] **M. Velez**. *Current and Future Relationships Between Robots and Humans*. Summa Cum Laude Paper. Apr. 2015.

[1] **M. Velez**, P. Gittins, and J. Sawin. *Extending SMILES to Encode Reaction Mechanisms*. Poster. Inquiry at St. Thomas. St. Paul, MN, USA, May 2014.

Awards and Honors

2015	**MSRP Research Internship at MIT**. Acceptance rate: 10.5%
2015	**CCSC:MW 1st place Student Posters & Showcase Discovery Track**. $100
2015	**UST Student Travel Grant**. $750
2014, 2015	**UST Collaborative Inquiry Grant**. $2,000

2012	**UST International Student Leadership Scholarship**. $500
2011 - 2015	**Bev and Pat Flaherty Scholarship**. $14,000
2010 - 2015	**University of St. Thomas International Scholarship**. $80,000
2010 - 2015	**University of St. Thomas Tuition Scholarship**. 40% discount
2008 - 2009	**American Field Service International Scholarship**.

Service

2017	ASE'17 Sub-Reviewer
2017	FSE'17 Sub-Reviewer
2017	CMU REU-SE Committee member
2016	ICSE'17 Sub-Reviewer

Other Interests and Activities

2018	Hispanic Googler Network
2014 - 2015	UST Game Design Club
2013, 2015	Note taker. Helped two students with disabilities to take notes in class
2012 - 2015	UST Computer Science Consultant
2011 - 2015	UST Computer Science Club
2010 - 2015	UST Globally Minded Student Association
2012 - 2013	St. Thomas Activities and Recreation President
2011 - 2012	St. Thomas Activities and Recreation Intern
2010 - 2012	UST Spanish Tutor
2011	2 STEM Learning Communities
2010 - 2011	UST Morrison Hall Council

References

Christian Kästner
Institute for Software Research
Carnegie Mellon University
✉ kaestner [at] cs.cmu.edu
☎ +1 412 268 5254

Pooyan Jamshidi
Computer Science and Engineering
University of South Carolina
✉ pjamshid [at] cse.sc.edu
☎ +1 412 519 8405

James Worcester
Android Google Search App
Google
✉ jworcest [at] google.com
☎ +1 703 402 2084

Norbert Siegmund
Department of Computer Science
Bauhaus-Universität Weimar
✉ norbert.siegmund [at]
uni-weimar.de
☎ +49 364 358 3850

Sven Apel
Department of Informatics and Mathematics
University of Passau
✉ apel [at] uni-passau.de
☎ +49 851 509 3225

Armando Solar-Lezama
Department of Electrical Engineering and Computer Science
Massachusetts Institute of Technology
✉ asolar [at] csail.mit.edu
☎ +1 617 258 9727