Henri Maxime Demoulin

220 South 33rd Street
School of Engineering and Applied Science
University of Pennsylvania
Philadelphia, PA 9104-6391
(919) 594-9154

maxdml@seas.upenn.edu
www.maxdml.com
http://fr.linkedin.com/in/henrimaximedemoulin/
https://github.com/maxdml

Education

Ph.D student, Computer Science
Thesis research: On the Design of Performant Datacenter Operating Systems, Network Protocols and Applications
University of Pennsylvania, Philadelphia, PA — Aug 2016 - Present
Advisors: Boon Thau Loo and Linh Thi Xuan Phan (co-advisor)

Master of Science, Computer Science
Duke University, Durham, NC — Aug 2014 - May 2016
Masters Thesis: Studying Recommender Systems to Enhance Distributed Computing Schedulers
Thesis committee: Benjamin C. Lee*, Bruce M. Maggs, Jeffrey S. Chase
GPA 3.682

Master of Science, Computer Science
École Supérieure d'Informatique, Paris, France/London, England — Sep 2006 - Dec 2011

Professional Experience

University of Pennsylvania (UPenn) Philadelphia, PA, USA. 2016 – Present. *Research Assistant,* Distributed Systems Laboratory.
DeDOS: Dispersing asymmetric denial of service attacks with decomposed software.

Microsoft Research Redmond, Redmond, WA, USA. 2019. *Research Intern,* Operating Systems Group.
Datacenter-OS: Develop novel design techniques for Datacenter applications that are to use specialized and heterogeneoeus I/O and compute hardware.

Perspecta Labs, Basking Ridge, NJ, USA. 2018. *Research Intern.*
DCOMP: DARPA Dispersed Computing. Exploration of MANET scenarios parameters with optimization algorithms. Integration with a cutting-edge hybrid MANET simulator.

Duke University, Durham, NC, USA. 2014 – 2016. *Research Assistant,* Distributed Systems Laboratory.
Studying Recommender Systems to Enhance Distributed Computing Schedulers.

Skopéo, Paris/Tunis, France/Tunisia. 2014. *Chief Quality Officer.*
Warehouse tracking solution and mobile application playbook for Western Africa.

Hedera Technology, Paris, France. 2012 – 2014. *Software Engineer.*
Kanopya: Abstraction to integrate and orchestrate diverse IaaS platforms.

Bysoft China, Guangzhou, Guangdong, China. 2011. *Quality Control Intern.*
E-commerce and CMS departments. ISO-9001:2008 compliance.

Software engineering internships:

As a student at L'École Supérieure d'Informatique

- Hedera Technology, Paris. 2010 – 2011
- 6 different summer and part-time internships, Paris, London. 2007 – 2010.
  Please refer to linkedin for more details.

Honors and awards

- Second place at the ACM SIGCOMM 2018 Hackathon
- First place at the ACM SIGCOMM 2017 Student Research Competition
- University of Pennsylvania School of Engineering and Applied Science Fellowship

Publications

- **TMC: Pay-as-you-Go Distributed Communication**
  Henri Maxime Demoulin, Nikos Vasilakis, John Sonchack, Isaac Pedisich, Vincent Liu, Boon Thau Loo and Linh Thi Xuan Phan, Jonathan M. Smith, Irene Zhang
  APNet 2019: Third Asia-Pacific Workshop on Networking.
- **Detecting Asymmetric Application-layer Denial-of-Service Attacks In-Flight with Finelame**
  Henri Maxime Demoulin, Isaac Pedisich, Nikos Vasilakis, Vincent Liu, Boon Thau Loo and Linh Thi Xuan Phan
  ATC 2019: Proceedings of the 2019 USENIX Annual Technical Conference.
- **RTNF: Predictable Latency for Network Function Virtualization**
  Saeed Abedi, Neeraj Gandhi, **Henri Maxime Demoulin**, Yang Li, Yang Wu, and Linh Thi Xuan Phan
  RTAS 2019: Proceedings of the 2019 IEEE Real-Time and Embedded Technology and Applications Symposium. **Best Student Paper Award**
- **DeDoS: Defusing DoS with Dispersion Oriented Software**
  Henri Maxime Demoulin*, Tavish Vaidya*, Isaac Pedisich, Bob DiMaiolo, Jingyu Qian, Chirag Shah, Yuankai Zhang, Ang Chen, Andreas Haeberlen, Boon Thau Loo, Linh Thi Xuan Phan, Micah Sherr, Clay Shields, and Wenchao Zhou
  ACSAC 2018: Proceedings of the 2018 Annual Computer Security Applications Conference.
- **Automated Detection and Mitigation of Application-level Asymmetric DoS Attacks**
  Henri Maxime Demoulin, Isaac Pedisich, Linh Thi Xuan Phan, Boon Thau Loo.
  SelfDN 2018: Proceedings of the Afternoon Workshop on Self-Driving Networks
- **The Web as a Distributed Computing Platform**
  Nikos Vasilakis, Pranjal Goel, **Henri Maxime Demoulin**, Jonathan M. Smith.
  EdgeSys 2018: Proceedings of the 1st International Workshop on Edge Systems, Analytics and Networking. **Best Paper Award**
- **A Demonstration of the DeDoS Platform for Defusing Asymmetric DDoS Attacks in Data Centers**
  Henri Maxime Demoulin*, Tavish Vaidya*, Isaac Pedisich, Nik Sultana, Jingyu Qian, Bowen Wang, Yuankai Zhang, Ang Chen, Andreas Haeberlen, Boon Thau Loo, Linh Thi Xuan Phan, Micah Sherr, Clay Shields, Wenchao Zhou.
  Proceedings of the SIGCOMM Posters and Demos, 2017. **First prize for the ACM Student Research Competition at SIGCOMM'17.**

- **Studying Recommender Systems to Enhance Distributed Computing Schedulers**
  Henri Maxime Demoulin.
  Duke University Master Thesis, 2016.

Skills

Designed and implemented large projects in C, C++, Python and Perl.

Datacenter-OS: A novel operating system for datacenters, that enables the exploitation of heterogeneous devices (such as smartNICs) through a library-OS design.

DeDoS: Founding member. A framework designed to build denial-of-service resilient software.
`http://dedos-project.net/`

Kanopya: An abstraction for managing multiple vendor's IaaS platforms. The solution includes a dynamic provisioning engine.

Teaching Experience

University of Pennsylvania TA:

- Fall 2019: Graduate Software Systems
- Spring 2018: Graduate Networked Systems

Duke University TA:

- Spring 2016: Undergraduate Operating Systems
- Fall 2015: Graduate Distributed Systems
- Spring 2015: (Undergraduate) Introduction to Computer Science

École Supérieure d'Informatique TA:

- Spring 2011: Novell technologies
- Spring 2011: Mandriva technologies
- Spring 2011: Ethical Hacking

Service

- Reviewer for Transactions on Networking 2018
- ACM XRDS Feature editor, 2016 – Present
- Distributed System Laboratory Seminar student organizer (Penn), 2017 – 2018
- Campus Lab Manager (ESI), 2009 – 2010