Mickaël Tardy
Chief Scientific Officer

Introduction

I started my career back in 2005 as a web developer building websites in LAMP stack with PHP4 and xhtml 1.0. Since then I walked through many different technologies and languages, always trying to stay up-to-date with the state-of-art in IT.

Since 2010 I worked at Keosys mainly contributing to the design and the architecture of the cloud-based clinical trials management solution. That gave me an opportunity of becoming full-stack, working both on front-end and back-end as well as on DevOps. That also taught me a lot about healthcare IT and its challenges.

Today I took a new turn in my career and got closer to the research in machine learning working as a chief scientific officer at Hera-MI and as a PhD student at Ecole Centrale de Nantes.

During past ten years I benefited of truly multicultural experience living in 3 different countries, working in different scholar, professional and volunteer environments. That contributed a lot to my personality, helped me to stay open-minded and developed self-discipline.

Professional experience

Present
Sep 2018

CHIEF SCIENTIFIC OFFICER, **Hera-MI SAS**, Nantes, France

Since September 2018 I took in charge the scientific direction of Hera-MI working on hot machine learning research topics, in particular weakly supervised and unsupervised learning. My efforts are lined up with my PhD project (LS2N, Ecole Centrale de Nantes) focused on early detection of breast cancer.

Aug 2018
Nov 2017

CHIEF TECHNOLOGY OFFICER, **Hera-MI SAS**, Nantes, France

Since November 2017 I joined Hera-MI and took a lead of various tasks including:
- Building prototype of mammography imaging processing software;
- Design and development of imaging annotation software (Javascript, electron, node, java, mongodb);
- Technical documentation and continuous bibliography (Image processing, machine Learning).

Nov 2017
Jan 2017

RESEARCH ENGINEER **Keosys**, Philadelphia, PA, United States / Saint-Herblain, France

From January 2017 I took a technical leadership of Keosys Research department. My role involves dealing with state-of-art technology stack and making use of it in healthcare solutions:
- Building machine Learning prototypes with Python, Keras, Tensorflow and Docker
- Designing imaging processing framework with ITK, VTK, and Docker
- Creating Data assessment tool with ReactJS and Spring Boot services

Dec 2016
Jan 2016

CLINICAL TRIALS SOLUTIONS ARCHITECT **Keosys and UC Science Center**, Philadelphia, PA, United States

During 2016 I worked as a solutions architect for Keosys at UC Science Center in Philadelphia, PA. Being involved in technical sales my role was to improve the scalability of Keosys solutions:
- Suggesting a set of provisioning tools for the simplified CI (Ansible)
- Creating monolith application replacement with Spring Boot, Docker, Jenkins and vSphere ESXi

Dec 2015
Sep 2010

SOFTWARE ENGINEER **Keosys**, Saint-Herblain, France

My role implied continual improvement of the corporate clinical trials management solutions with awareness of healthcare IT concerns as well as sensible data processing (e.g. DICOM, ISO 13485, FDA 21 cfr 11):
- Development of front-end application suite connected to the cloud platform and browser application with Electron, JavaScript, Java, ActiveMQ and RabbitMQ
- Building UI framework with javascript, AngularJS 1.x, npm, bower, gulp, nexus, yoman,
- Migrating build schema of Java applications to Maven, private Nexus, Jenkins stack
- Building java test framework with TestNG, Maven, Mockito, and Redmine

EDUCATION

PRESENT SEP 2018	**PHD STUDENT** **Ecole Centrale de Nantes, Hera-MI**, Nantes France My PhD project, performed at Hera-MI SAS and SIMS, LS2N, Ecole Centrale de Nantes is focused early breast cancer detection. The research is funded by National Association of Research and Technology (CIFRE)
NOV 2011 SEP 2008	**MASTER'S DEGREE IN GENERAL ENGINEERING** **Ecole Centrale de Nantes**, Nantes France Large scope cursus covering great amount of scientific fields. Remarkably during three years at school a lot of attention is payed to the professional integration: internships are mandatory at the end of each year.
FEV 2011 SEP 2005	**MASTER'S DEGREE IN MEASUREMENT SYSTEMS** **Moscow State Institute of Radio Engineering, Electronics, and Automation (MIREA)**, Moscow, Russia The 5.5 year cursus is mainly focused on the elaboration of the complex measurement systems covering all of their aspects: from the design of the measurement instruments to the deployment and management of information systems.

SKILLS

Software development

- Programming paradigms: OOP, Procedural programming, SOP (SOAP, REST), TDD
- Programming languages: Java, Javascript, C/C++, PHP
- Java frameworks: Spring, Struts, Hibernate
- Front-end web: HTML, CSS, JavaScript, NPM, Bower, Gulp
- Data formatting and markup: XML, HTML, XSL, LaTeX, DOT
- Databases: SQL (MySQL, MS SQL), NoSQL (MongoDB)
- Version control: SVN, GIT

Software testing

- Unitary testing, Integration testing
- Software testing tools: JUnit, TestNG, Mockito, Selemium, Mocha

Software production

- Server software: JBoss AS, Apache HTTP, Nginx
- Build and management tools: Maven, NPM, Bower, Gulp, Webpack

DevOps

- Continuous integration: Jenkins, Gitlab CI, Travis CI
- Provisioning: Ansible
- Virtualization: Docker, CoreOS, vSphere ESXi
- Miscellaneous: Atlassian software (JIRA, Confluence, Bitbucket)

Medical Imaging

- Imaging modalities: CT, PET, MRI, Mammography
- Image processing: Registration, Segmentation
- Machine learning: CNN, Python, Keras
- Tools: ITK, VTK, Paraview
- Regulation (CNIL, FDA), Standards (CDISC, DICOM, HL7)

Machine Learning

- Random Forest, K-Means, KNN, Manifold learning
- Deep Learning, CNN, GAN
- Tools: Python, scikit-learn, Tensoflow, Keras

LANGUAGES

FRENCH:	Bilingual
RUSSIAN:	Bilingual
ENGLISH:	Fluent
GERMAN:	Basic knowledge (A2 CEFR)

PERSONAL QUALITIES

Autonomous, rigourous, self- and team-demanding, punctual

EXTRACURRICULAR ACTIVITIES

- Rowing practice on the regional and national level;
- Rowing coaching of high-school and students novices (from 12 to 25 years old);
- Rowing club assistant manager: training camps and regattas logistics