

# Gennaro Frazzingaro

## Sr. Engineering Manager

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## Technical Skills

Objective-C • Swift • JS • TypeScript

C • C++ • Java • Scripting

Python • Scala • Perl

## Education

**MS, Computer Science** (GPA equiv: 3.8)  
Specialization: Artificial Intelligence  
University of Calabria  
2007 - 2010 | Calabria, Italy

**BS, Computer Science** (GPA equiv: 4.0)  
University of Calabria  
2004 - 2007 | Calabria, Italy

## Patents

### Co-inventor of P38048USP1

Accessing Multiple Domains Across Multiple Devices For Candidate Responses.  
Apple Inc., Mar 2018.

### Co-inventor of P33966US1

Feedback Analysis of a Digital Assistant.  
Apple Inc., Aug 2017.

### Co-inventor of P34063US1

Synchronization and Task Delegation of a Digital Assistant.  
Apple Inc., Jun 2017.

### Co-inventor of P34373US1

Optimizing Dialogue Policy Decisions for Digital Assistants Using Implicit Feedback.  
Apple Inc., Jan 2017.

## Awards

### Summa cum laude

Awarded to the top students in their final year of a Masters degree.  
University of Calabria, 2010.

### Summa cum laude

Awarded to the top students in their final year of a Bachelor degree.  
University of Calabria, 2007.

Jul 2017 - Present

### Sr. Engineering Technical Manager, Siri

Apple Inc.

Managing a team of 12 developers, primarily responsible for:

- Distributed execution of a Siri request using portable code, and the platform for Siri ML models to run inference on-device,
- Supporting Siri fully offline, to enable further personalization of the user experience whilst respecting the user privacy, and improving Siri's performance and reliability,
- Providing the runtime environment for other platforms higher in the stack, such as the publicly known SiriKit and Siri Shortcuts.

Jan 2015 - Jul 2017

### Sr. Software Engineer / Technology Lead, Siri

Apple Inc.

Member of both Server and Client Siri Platform teams, delivering features focused on Privacy and Personalization, covering the full stack, and coding in different programming languages on a daily basis. I've mentored many junior engineers, and worked cross-functionally across teams and organizations.

- Built a platform and led a team to collect implicit feedback from Siri users, both during and after a Siri request, and perform on-device analysis, respecting the user's privacy. Patented.
- Led the cross-functional work at Apple to collect user engagement, use feedback to replace manual grading, and promote Reinforcement Learning. Patented.
- Built the first Siri user profile on-device, in order to deliver personalized Siri user experiences, and allow Siri itself to promote features to users when appropriate. Data is shared securely over iCloud, across all devices owned by the same user. Patented.
- Built a platform to execute arbitrary code on iOS devices during idle time, updatable out of band. Patented.
- Member of the Siri Architecture Working Group, and contributed to make Siri available offline.

Mar 2012 - Jan 2015

### Sr. Tools Engineering / Technical Manager, Siri

Apple Inc.

- Built and led a team of 4 developers, and promoted Agile Methodologies, including CI, CD, and TDD.
- Built a content management system as a web tool for Siri use cases, bridging the gap between design, implementation and testing, and contributed in redefining the process for creating a Siri use case. The CMS uses technologies such as Typescript, AngularJS, MongoDB, Solr, and integrates with the GitHub APIs.
- Coordinated cross-functional work across Siri Design, Operations, Security, Machine Learning, Siri Build, Siri ASR and NLP, and Siri QA.
- Led the efforts to improve the XML-based programming language used to define Siri's responses.
- Built tools to explode permutations of Siri's response XML representation, in order to ease the review process of Siri's utterances by MarCom, Design and Apple Legal.
- Built tools to allow non-technical content creators to deploy Siri responses to production.

Sep 2009 - Mar 2012

### Software Engineer, Core Localization Technologies

Apple Inc.

- Member of the team responsible to build the tools to streamline the process of localizing Siri in 4+ languages after the acqui-hire, and build the foundation that allows Siri to speak 21+ languages (and counting) today.
- Built a framework for Language Generation, to transform Context Free Grammars (CFGs) into examples suitable to train statistical models.
- Built a rule-based system to learn Context Free Grammars (CFGs) from POS-tagged exemplars.
- Built content management system for "terminology memory", to define a cross-language glossary of Apple translations, and systematically leverage previously translation of specific terms across translation units.

Feb 2009 - Jul 2009

### Intern, Localization Engineering

Apple Inc.

- Lead development of an internal-only iOS applications to facilitate the creation of issues and collection of logs from the device.
- Built Web applications to streamline the in-country issue tracking and reporting of the iPhone International QA team.

Mar 2007 - Sep 2007

### Intern Researcher

DERI Galway, Ireland

Member of the Semantic Web research group, working on a query solver for the Semantic Web using non-monotonic reasoning over RDF resources.