

# Alberto Pettarin

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**CURRENT POSITION** Senior Software Engineer, TTS R&D, Nuance Communications

**RESEARCH INTERESTS** Natural Language and Speech Processing  
High Performance Computing  
Text and Data Mining  
Digital Publishing

**EDUCATION** **University of Padova**, Padova, Italy

**2009-01–2011-12** *PhD Information Engineering (Dottorato di Ricerca)*

- Thesis: Graph Models of Information Spreading in Wireless Networks
- Advisors: Professor Geppino Pucci jointly with Professor Andrea Pietracaprina
- I studied stochastic graph models of information spreading processes in wireless networks, with emphasis on mobile networks.

**2006-10–2008-07** *MSc Computer Engineering (Laurea Magistrale)*

- Thesis: On the Diameter of Bluetooth-Based Ad Hoc Networks
- Final grade: 110/110 *cum laude*, GPA 29.85/30 over 13 exams, 9 exams *cum laude*

**2003-10–2006-07** *BSc Information Engineering (Laurea)*

- Thesis: DocTrivXlet: a Java Micro Edition Application for the MFP Ricoh Aficio 2051
- Final grade: 110/110 *cum laude*, GPA 29.17/30 over 21 exams, 7 exams *cum laude*

**PROFESSIONAL EXPERIENCE** **Nuance Communications**, Turin, Italy

**2017-06–present** *Senior Software Engineer*

- I work in the text-to-speech research and development (TTS R&D) team. I created Python wrappers for the C API of the main TTS system, and the corresponding test drivers, which yield better coverage and easier-to-write test stories. I am also in charge of redesigning the sample application (Python, Tkinter) distributed with the main TTS system.

**Freelance Python/C Developer**, Venice, Italy

**2015-07–2017-05** *Freelance Developer*

- Selected projects: I tuned and extended an optimization MILP kernel for industrial packing applications (Java, C, CPLEX); I developed C extensions for computing MFCC and DTW for the forced alignment package **aeneas** (Python, C); redesigning the **Menestrello** app (Cordova, JavaScript, Java, ObjC), and the **aeneas** Web application (Python, Flask).

**ReadBeyond** (formerly, Smuuks), Padova, Italy

**2012-09–2015-06** *(Co-Founder, CEO, and) Head of Research*

- ReadBeyond (<http://www.readbeyond.it/>) was a research lab which developed innovative solutions for creating, distributing, and enjoying digital contents. I was the lead developer of our two main projects: **aeneas** (automated audio/text synchronization) and **Menestrello** (Android/iOS app for reading+listening EPUB 3 Audio-eBooks).

**Brown University**, Providence, RI, USA

**2010-01–2011-06** *Visiting Research Scholar*

- Host: Professor Eli Upfal
- Head Teaching Assistant for CSCI1580 “Information Retrieval and Web Search” (Spring’10 and Spring’11)

**University of Padova**, Padova, Italy

**2012-11–2013-12** *Research Collaborator*

- I supervised student projects and theses involving mobile platforms and eBooks.

**2008-09–2012-12** *Reviewer*

- For 2 Journals and 10 Conferences in Theoretical Computer Science and Distributed Computing.

**2012-02–2012-10** *Research Collaborator*

- Working on a Data Mining Research Project funded by Tektronix
- I was responsible of devising new algorithmic techniques for mining quantitative association rules, and implementing them in a proof-of-concept DM tool.

**2009-01** Chartered Engineer Examination (*Esame di Stato per l'Albo degli Ingegneri*)

**2008-10–2008-12** Research Assistant

- European Union research grant to study diameter and expansion of Bluetooth Topology graphs, under FP6-IST/IP Project AEOLUS.

**2007-10–2009-09** Teaching Assistant

- 4 editions of “Introduction to Computer Programming” and “Calculus I” for engineers.

PROGRAMMING

- **Excellent:** EPUB 2/3, L<sup>A</sup>T<sub>E</sub>X, Python, Python C API
- **Good:** C, GCC, Java, MOBI/KF8, NLTK, NumPy, Pattern, Polyglot, spaCy, XML
- **Routine use of:** Awesome WM, Bash, Debian GNU/Linux, MacOS
- **Also worked with:** Android, Arduino, Celery, Cordova, CPLEX, Flask, Gunicorn, iOS, JavaScript, nginx, Objective-C, PyTables, Redis, rq, Rust, SciPy

SELECTED FREE  
SOFTWARE/OPEN  
SOURCE PROJECTS

- **aeneas:** automated synchronization of audio and text (Python, NumPy, C) [↗](#)
- **aeneasweb.org:** Web App for **aeneas** (Python, Flask, Gunicorn, nginx, rq, Redis) [↗](#)
- **Minstrel/Menestrello:** Android/iOS app for enjoying EPUB 3 Audio-eBooks (Cordova, JS, Objective-C, Java) [↗](#)
- **ipapy:** a module to work with IPA strings (Python) [↗](#)
- **glyphIgo:** a Swiss Army knife for dealing with fonts and EPUB eBooks (Python) [↗](#)
- **Penelope:** a multi-tool for creating, editing and converting dictionaries (Python) [↗](#)

Full list: <https://github.com/pettarin/> and <https://github.com/ReadBeyond/>

HONOURS AND  
AWARDS

**2014-11** First Prize at the “Librinnovando Awards 2014“, Milan, Italy

**2012-09** Fellowship to attend *The International Summer School on Entrepreneurial Management and Innovation 2012*, Desenzano del Garda, Italy

**2010-01–2011-12** “Fondazione Ing. Aldo Gini” Fellowship to conduct research abroad

**2008-11** “Leonardo Melandri” Fellowship to attend *The 4th Bertinoro Workshop on Randomized Algorithms and Graphs*, Bertinoro, Italy

**2003-10** “Alfiere del Lavoro” Prize of the President of Italy to the best 25 high school students

PUBLICATIONS

- List from the DBLP: <http://dblp.uni-trier.de/pers/hd/p/Pettarin:Alberto.html>
- Preprints: <http://www.albertopettarin.it/cv.html>

PRESENTATIONS

- *The Journey of aeneas: a Python Adventure in Text and Speech*, PyCon Italia, Florence, Italy, 2017-04-08
- *EPUB 3 Audio-eBooks and Reading Apps*, CILP 2016, Feltre, Italy, 2016-04-16
- *Improving Literacy With Audio-eBooks*, Librinnovando 2014, Milan, Italy, 2014-01-14
- *Anatomy of a Strange Digital Project: Dante meets Queneau*, EbookCamp 2012, Loreto, Italy, 2012-09-29
- Mini-course: *Pills of L<sup>A</sup>T<sub>E</sub>X*, PhD School in Pharmaceutical Sciences, Padova, Italy, 2012
- *L<sup>A</sup>T<sub>E</sub>X to EPUB: a Poor Man’s Guide to Publishing Math Ebooks*, EbookCamp 2011, Loreto, Italy, 2011-10-23
- *Tight Bounds on Information Dissemination in Sparse Mobile Networks*, PODC 2010, San Jose, CA, USA, 2010-06-08
- *On the Expansion and Diameter of Bluetooth-Like Topologies*, ESA 2009, Copenhagen, Denmark, 2009-09-09
- Mini-course: *L<sup>A</sup>T<sub>E</sub>X’s Fabulous World*, IEEE Student Branch, Padova, Italy, 2008

LANGUAGES

Italian (native), English (fluent)

CONTACT  
INFORMATION

Web: <http://www.albertopettarin.it/>  
E-mail: [alberto@albertopettarin.it](mailto:alberto@albertopettarin.it)  
Skype: alberto.pettarin  
G Hangouts: [pettarin@gmail.com](mailto:pettarin@gmail.com)  
Mobile: +39 340 82 18 704



LAST UPDATE

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I authorize the use of my personal data in accordance with the Italian Privacy Protection Law (30/06/2003, n. 196/03).