Gianni Giorgetti, PhD

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I am a computer engineer with a passion for research and software development. I enjoy working on challenging problems, explore state-of-the art solutions, and help companies deliver viable products to their customers.

Specialties: Signal Processing · RF-Based Positioning Systems · Estimation and Tracking · Computer Vision · Machine Learning · Mobile & Cloud Computing · Wireless Networking · Embedded Systems

Work Experience

- **2015-Present** ———— ***VP of Research***, Accuware, Inc — Miami Beach, FL.
  Lead the research and development of Accuware video technology combining computer vision and AI (www.sentinelcv.com). The system implements two main features: **1) detection and tracking** of multiple individuals (pedestrians) in video scenes, and **2) visual search and cross-camera re-identification** using appearance models computed with custom trained **deep neural networks**.
  Technology Stack: `Java` , `Python` , `Docker` , `OpenCV` , `CUDA` , `Torch` , `MATLAB` , `JNI` , `C\C++` , `REDIS` , `AWS Lambda` , `AWS EC2 Spot Instances` , `AWS S3`

- **2010-2015** ———— ***Director of Research***, Navizon, Inc — Miami Beach, FL.
  Responsible for overseeing research on indoor positioning technologies (geo-localization) in indoor spaces. Developed the two main indoor technologies commercialized by Navizon. **1) Mobile Indoor Navigation**: a smart-phone oriented technology capable of fusing inertial information with radio signals to deliver navigation data with sub-meter accuracy. Our SDK have been integrated in numerous third-party apps (Android and iOS) requiring location awareness in indoor spaces where GPS is unavailable . **2) Remote Monitoring/Tracking using Wi-Fi and Bluetooh**: a system comprised of self-configuring embedded devices capable of collecting Wi-Fi/BT signal for passive tracking of smart phones and custom radio devices. The technology has been deployed in hundreds of sites worldwide where it is still used to collect data for asset/personnel tracking and business intelligence.
  Technology stack: `Java` , `Android OS` , `Ruby` , `Redis` , `MATLAB` , `C\C++` , `Make` , `GCC` , `REST API` , `AWS Dynamo DB` , `AWS S3`

- **2009-2010** ———— ***Interim Engineer***, Advanced Technologies Group, Qualcomm, Inc — San Diego, CA
  Researched indoor positioning technologies for remote tracking of asset and personnell. Built a self-configuring IEEE 802.15.4 mesh network capable of tracking the positions of mobile tags via multi-lateration algorithms based on RSS measurements. The network was used to track volunteers inside Qualcomm offices over a period of 12 months and it was awarded a prize as one of the best research projects during QTech2010 (Qualcomm internal technology conference).
  Technology stack: `C/C++` , `IEEE 802.15.4` , `Eagle Schematics` , `MATLAB` ,

Related Experiences and Entrepreneurship

- **2016-Present** ———— ***Founder and President***, TextRanch, LLC — online at www.textranch.com.
  TextRanch is a fully bootstrapped business that offers proofreading services for written English. The site currently processes about 16K monthly revisions from 100K+ registered users. During the past three years the service has grown at a rate of 100% year over year.
  Technology stack: `Django` , `Postgress` , `REDIS` , `Javascript` .

- **2003-2004** ———— ***Research Associate***, Università degli Studi di Firenze — Italy
  Contributed research on ad-hoc, low-power sensor networks during the proposal and initial phase of the GoodFood project (EU Funded Project / 17.5M Eur). Developed new in-field diagnostic tools (PDA-based) to detect hard to reproduce failures in an existing wireless system. Technology stack: `ASM x86` , `C\C++` , `C++`

- **1995-2003** ———— ***Software developer and consultant***, self employed — Italy
  Developed custom software and computer architectures for several small and medium sized Italian companies.
  Technology stack: `ASM x86` , `C` , `C++` , `JAVA` , `MS Visual Basic` , `MS Access` , `MS Excel` , `MS COM/OLE` , `Linux` , `Samba` .

Patents

- **US10026003B2** *Method and arrangement for receiving data about site traffic derived from imaging processing*. Issued Jul 17, 2018.
- **US9226224B1** *Method and system for obtaining information about Wi-Fi enabled telecommunications devices*. Issued Dec 29, 2015.
- **US8890705B2** *Location determination using radio wave measurements and pressure measurements*. Issued Nov 18, 2014.
- **US8774829B2** *Sensor node positioning for location determination*. Issued Jul 7, 2010.

Education

- **2005-2009** ——— ***PhD, Electrical Engineering***, Arizona State University — Tempe, AZ, US
  Research topics: Signal Processing, Parameter Estimation, RF-Based Localization.
  Internships: Embedded Systems Research, Motorola Labs, Tempe AZ, US (2006 and 2007)
  Dissertation: *"RF-Based Localization in GPS-Denied Applications"*
- **2004-2007** ——— ***Dottorato di Ricerca in RF, Microwaves, and Electromagnetism***, Università degli Studi di Firenze — Italy
  Research topics: Wireless Sensor Networks, Remote Monitoring, Localization service.
  Dissertation: *"Resource-Constrained Localization in Sensor Networks"*
- **1999-2003** ——— ***Laurea in Computer Science Engineering***, Università degli Studi di Firenze — Italy
  Internships: Microfluidic Lab, Motorola Labs, Tempe AZ, US (2002)
  MS Thesis: Rapid On-Chip DNA Amplification

Selected Publications

- G. Giorgetti, R. Farley, K. Chikkappa, J. Ellis, and T. Kaleas. *Cortina: collaborative indoor positioning using low-power sensor networks*. Journal of Location Based Services, 6(3), 137-160, 2012.
- G. Giorgetti, S.K.S. Gupta, and G. Manes. *Understanding the Limits of Collaborative RF-Based Localization*. Networking, IEEE/ACM Transactions on, 19(6), 1638-1651, 2011.
- A. Cidronali, S. Maddio, G. Giorgetti, and G. Manes. *Analysis and performance of a smart antenna for 2.45-GHz single-anchor indoor positioning*. Microwave Theory and Techniques, IEEE Transactions on, 58(1), 21-31, 2010.
- G. Giorgetti, S. Maddio, A. Cidronali, S.K.S. Gupta, and G. Manes. *Switched Beam Antenna Design Principles for Angle of Arrival Estimation*. IEEE EuMW2009.
- G. Giorgetti, A. Cidronali, S.K.S. Gupta, and G. Manes. *Single-Anchor Indoor Localization Using a Switched-Beam Antenna*. IEEE Communications Letters, Vol. 13, No. 1, January 2009.
- G. Giorgetti, S.K.S. Gupta, and G. Manes. *Optimal RSS Threshold in Connectivity-Based Localization Schemes*. ACM MSWiM'08.
- K. Bannister, G. Giorgetti, and S.K.S. Gupta. *Wireless Sensor Networking for Hot Applications: Effects of Temperature on Signal Strength, Data Collection and Localization*. HotEmnets'08.
- G. Giorgetti, A. Cidronali, S.K.S. Gupta and G. Manes. *Exploiting Low-Cost Directional Antennas in 2.4GHz IEEE 802.15.4 Wireless Sensor Networks*. IEEE EuMW'07.
- G. Giorgetti, G. Manes, J.H. Lewis, S.T. Mastroianni and S.K.S. Gupta. *The Personal Sensor Network: a User-Centric Monitoring Solution*. BodyNets'07.
- G. Giorgetti, S.K.S. Gupta and G. Manes. *Wireless Localization Using Self-Organizing Maps*. ACM IPSN'07.