

# Gautam Singaraju

Engineering, Machine Learning, Ph.D.

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## ServiceNow, CA — Senior Staff Machine Learning Engineer

July 2021 - Now

Advanced Technology Group provides Machine Learning Center of Excellence, providing ML features that are integrated into the ServiceNow offering.

Currently working on AI Search, Natural Language Processing, Component Framework and optimizing production models.

## Oracle, CA — Engineer, Architect, Machine Learning And Natural Language Understanding

February 2016 - June 2021

Oracle Digital Assistant product helps customers build virtual agent assisted conversational interfaces to deflect call traffic resulting in lower total cost of ownership.

Responsible for Machine Learning and Natural Language Understanding Features, engineering and mentoring team. Wrote production code for core features: Intent classification (features Sentence Embeddings, ML classification models, Train-Serve architecture), Data Curation Tools and currently focusing on xAI (explainability). Optimized Models for Fast Inference with Minimal dependency (Apache Spark, Java-C++ JNI bridge). Explored Knowledge Graph Embeddings.

Oracle Digital Assistant's [Customer References](#)

## GE Digital, CA — Senior Architect

October 2014 - January 2016

GE Digital Platform provided analytics solutions across GE. As an architect working for Power & Water and Oil & Gas teams, designed systems for ingesting, analyzing asset time-series data. The analytics identify generator failure detection from sensor data.

## Electronic Arts, CA — Technical and Team Lead

March 2012 - October 2014

Electronic Arts Data Platform provides an unified analytics platform across Video Game Studios for large scale gaming data.

## SKILLS

Product Engineering Leader, Machine Learning, Cloud and Distributed Architecture, Business Analytics.

## PATENTS

3 granted, 6-7 at application stages: [Justia Patents Search](#)

## EDUCATION

### UNC Charlotte, Ph.D.

2003 - 2009

Dissertation: Towards Sender Accountability on Email Infrastructure using Sender Identity and Reputation Management.

### UNC Charlotte, MS

2001 - 2003

Thesis: Testbed for evaluation of intrusion detection systems.

### JNTU, Bachelors

2001 - 2003

Project: Signature Analysis Using Neural Networks.

First engineer and later team lead, built the multi-tenant platform and analytics to multi-million dollar games (FIFA, NFL, NHL, Battlefield); running into PetaByte scales.

### **Ask.com, CA— Senior Engineer**

June 2010 - March 2012

Ask Data Team provided analytics for Ask Search engine.

Built analytics for identifying the top queries at the search properties across different channels and countries, Search Engine Monetization.

Built analytics to report top queries given a keyword using HBase.

### **UNC Charlotte, NC— Postdoctoral Researcher**

August 2009 - May 2010

Assessing Botnet Population Dynamics and Relationships. Profiling Malicious Domain Behavior From Top-Level Domain Data.

### **Technical Staff Intern, CA— Postdoctoral Researcher**

May 2007 - August 2007

Performance analysis of iSCSI on VMware ESX Servers. Worked on Disaster Recovery performance scenarios with VMware ESX server.

### **UNC Charlotte, NC - Graduate Assistant**

Jan 2002 - May 2009

Research: Email Security, Data Synchronization techniques, Applied Cryptography, Intrusion Detection Networks, Honey pots.

Taught graduate level courses on Information Security.

## **Selected Publications**

Entropy-Based Measurement of IP Address Inflation in the Waledac Botnet, FloCon 2011.

Concord: A Secure Mobile Data Authorization Framework for Regulatory Compliance, USENIX LISA November 1, 2008.

Tracking Email Reputation for Authenticated Sender Identities, CEAS, April 1, 2008.

RepuScore: Collaborative Reputation Management Framework for Email Infrastructure, USENIX LISA 2007.

A Testbed for Quantitative Assessment of Intrusion Detection Systems Using Fuzzy Logic, IWIA, January 1, 2004.

## **SOFTWARE**

Java, Python, Apache Spark ML, Kafka, TensorFlow, Kubernetes, Big Data Stack..

## **Volunteer**

System Administration for Non-profit organizations

Researcher with George Mason University

1. Botnet population dynamics
2. Profiling malicious domain names from top level domain registration data.

Program Committee Member for International Conference on Operations Research and Enterprise Systems 2017