

# Henry Tao

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## Objective:

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Obtain a position with an innovative IT team that will enable me to use my strong systems integration skills and apply design principles such as event sourcing and domain driven design to build predictable real-time systems and applications.

## Summary:

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I am a determined and highly-motivated developer and database expert with eighteen years experience ranging from startups to large enterprise organizations. I am a relentless learner who craves to build elegant highly performant backend systems as well as beautiful user-focused client applications.

## Expertise and Key Skills:

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### Actively Using

Scala(2.12); Akka Streams(2.5); C++(11, 14); ECMAScript(6, 7); C#(3, 6); React(16); React Native(0.55.4); Node.js(5, 6, 7); Cassandra(3.11); PostgreSQL(9.6, 10); MongoDB(3.2); SQL Server(2008, 2012); WCF(3.5); Docker(1.13)

### Used in Past

D3.js(3.5)<sup>2+</sup> (2013); Angular.js(1.3)<sup>2+</sup> (2015); Oracle(10G)<sup>1+</sup> (2009); Backbone.js<sup>2+</sup> (2014); Python<sup>1-</sup> (2014); C<sup>1</sup> (2011); Reporting Services<sup>3-4</sup> (2010); WPF<sup>1</sup> (2011); Silverlight<sup>2</sup> (2011); Windows Forms<sup>2</sup> (2008)

## Professional Experience:

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**NYU Langone Health**, New York, NY

*Lead Developer, Research IT* 2013 - Present

- Designed and implemented real-time patient demographics database backed by Cassandra (5 node, 2 datacenter cluster) and built on top of Akka Streams.
  - Developed seamless HL7 to Cassandra UDT adapter for upstream persistence.
  - Downstream applications include real-time demographic updates and analytics using Spark. (Proposed)
  - Downstream databases include PostgreSQL allowing for horizontal application software development. (Proposed)
- Designed and deployed MongoDB sharded cluster with 15 database instances (5 replica sets with 3 instances each), 5 config servers, and 5 mongos across 5 servers.
  - Allows the consumption and processing of HL7 (ADT\_A08 & ADT\_A31) messages; 30K per day/2.5MM per month.
  - Easily retain TB's of storage.
- Designed and implemented the Research Integration Layer that propagates real-time updates across multiple application domains including:
  - Epic EHR (Electronic Health Record)
    - Study creation in Epic from CRMS
    - Patient enrollment in Epic from CRMS
    - Synchronization of patient demographics between Epic and CRMS
  - PeopleSoft Finance
    - Proposal and award creation in PeopleSoft from Grants
    - Payment creation in CRMS from PeopleSoft
  - IRB (Internal Review Board)
  - CRMS (Clinical Research Management System)
  - IACUC (Institutional Animal Care and Use Committee)

**Fluitec Wind**, Jersey City, NJ  
*Front-end Lead Developer* 2012 - 2013

- Developed custom interactive data visualizations for post-process Hadoop resultsets of wind turbines

**UNFCU**, Long Island City, NY  
*Consultant* 2009 - 2012

- Developed and implemented mission critical ETL that powers the enterprise data-warehouse
  - Replaced incumbent solution that took 17+ hours daily to complete and reduced it to 45 minutes

**Ellen Tracy**, New York, NY  
*Systems Integration Specialist* 2008 - 2009

- Integrated 2 major retailers to enterprise Oracle ERP

**UNFCU**, Long Island City, NY  
*DBA and DWH Report Writer* 2006 - 2008

**John Wiley & Sons**, Hoboken, NJ  
*Senior Systems Analyst and Programmer - HRIS* 1999 - 2005

**National Financial Services**, New York, NY  
*Mutual Fund Representative* 1997 - 1999

**JET Programme**, Awaji Island, Japan  
*Assistant English Teacher* 1995 - 1997

## Education:

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**SUNY at Buffalo**, 1990 - 1994  
*Bachelor of Science (BS), Finance and MIS, Summa Cum Laude*

## Projects:

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**Cassandra-UDT-Codec-Helper**, 2018 - Present

- Transform Scala classes to Cassandra UDT seamlessly

**HL7-Cassandra-Adapter**, 2018 - Present

- Persist raw HL7 V2 messages to Cassandra UDT's in Scala

**React-Native-Responsive-Grid-Demo**, 2018 - Present

- WIP patient management mobile app

**OAuth2-Server-Redis**, 2017 - Present

- OAuth2 server based on OAuth2orize with Redis as session store

**LongBall-FHIR**, 2017 - Present

- FHIR Modeling in C++14

**Store**, 2016 - Present

- Common API for implementing event sourcing and event store. Comes in 2 flavors:
  - C++11
  - C#

**Rx-Web**, 2016 - 2018

- Web server implementing observable semantics. Comes in 2 flavors:
  - C++11
  - ECMAScript 7

**Vinyl**, 2017 - 2018

- Yet another React primitive components library

**React FHIR**, 2016

- FHIR Application built with React/Redux

**DocGraph**, 2014

- Process 132 Million edges from Medicare using Hadoop and HBase inside a cluster of Docker containers