**EDUCATION**

**LinkedIn Profile**

linkedin.com/in/spencershadley

**University of Texas at Austin, Bachelor of Science in Computer Science** May 2016

* Minor in Theoretical Quantitative Analysis

Courses Object Oriented Programming, Modern Web Applications, Algorithms and Complexity, Data Management, Wireless Networks, Compilers, Operating Systems, Computer Architecture, Debugging and Verifying Programs, Longhorn Startup Seminar, Behavioral Ethics: Digital Age, Data Structures

**EXPERIENCE**

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| [**Astronomer**](https://www.astronomer.io/) **(data orchestration startup) – Cloud IDE Team**, Seattle, WA Jan 2023 – April 2023  Staff Software Engineer   * Contributed to Apache Airflow and the Astronomer Cloud IDE – owned new features and fixed ~100 bugs * Improved developer experiences – added unit test tooling/methodologies, redesigned state management, and more * Fully remote * Added conversions between expressions and literals   + Allowed writing expression code to directly inject Python code into the generated DAG for Airflow   + Literals provided a nice GUI * Laid off as part of ~50% company workforce reduction (performance was not a consideration)   **Tableau, a Salesforce Company – Stay on the Web Team** | Seattle, WA Sep 2016 – Jan 2023  Principal Software Engineer   * Reduced costs by $50 million/year and vastly improved data quality by automating event-driven telemetry data collection * Delivered features marketed as the top highlight such as Workbook Optimizer and performance-oriented projects * Advised projects across teams and individuals, led cross-org efforts, founded new teams, lectured for communities, etc. * Revamping all of Tableau to a code ownership experience model from a component-based model   Lead Software Engineer Aug 2020 – Jan 2021   * Improved time to interactive performance by 10,000% by initiating a re-architecture of Tableau across orgs and teams * Mentored numerous engineers, over 50 of whom mentioned me as their mentor in yearly review feedback * Implemented the Tableau protocol for seamless transitions between web and desktop, originally as a hackathon * Transpiling 1.3 million lines of source code for the core Tableau visualization from Saltarelle to TypeScript   Senior Software Engineer Jan 2019 – Aug 2020   * Saved $8.3+ million per year by driving the [decision and effort to remove Internet Explorer support from all products](https://www.tableau.com/about/blog/2020/6/upcoming-changes-tableau-operating-system-requirements) * Established new teams across orgs to improve performance, ensure high-quality data source connectors, and more * Fostered Tableau’s web community as the Web Community Driver and through mentorship of teams, engineers, and interns   Software Engineer Sep 2016 – Jan 2019   * [Unblocked eight-figure contracts by building a platform to enable 31 key data source connectors on Tableau Server](https://onlinehelp.tableau.com/current/pro/desktop/en-us/help.html#creator_connect.html) * Migrated Tableau to a Progressive Web Application (PWA), results showed a page load time decrease of 36% * Improved agile best practices as Scrum Master and security best practices as Security Champion   **University of Washington**, Instructor | Seattle, WA Nov 2019 – May 2020   * Taught extended bootcamp on Full Stack Web Development as part of the university’s Continuing Education Program * [Covered 103 topics including computer science theory, databases, frontend, and backend web development](https://public.tableau.com/profile/spencer.shadley#!/vizhome/UWTechnologies/TechnologiesbyType) * Exceeded target performance metrics, rated 4.9/5 on instructor knowledge, and placed within the top 20% of instructors * Delivered 15 hours of lecture and 10 office hours each week for the six-month course, reviews at <https://bit.ly/2VaBoYE>   **Bizler**, Co-Founder, CTO, Lead Developer, Scrum Master | Austin, TX Feb 2016 – Feb 2017   * Co-founded a company of five people to improve the experience of networking at offsite business conferences * Architected the apps and chose technologies including Azure, ElasticSearch, Docker, TypeScript, and Angular   **Android > Apple Company**, Founder and CEO | Austin, TX Aug 2011 – Feb 2016   * Developed mobile applications for Android and Blackberry published in various stores * Generated 100,000+ total downloads and selected as Amazon’s “Free App of the Day”   **PayPal – Global Operations Architecture Team**, Intern | Austin, TX May 2015 – Aug 2015   * Converted images into live UML diagrams which were completed and in production 11 weeks early * Produced single-page MEAN alerts web app using SSL, responsive design, and live chat with WebSockets and Socket.io   **IBM – InfoSphere Master Data Management**, Intern | Austin, TX May 2014 – Aug 2014   * Built a BlueMix web application to replace several systems using Reference Data as a Service   **Garland Independent School District**, Course Author | Garland, TX May 2012 – Aug 2013   * Authored Mobile Application Development course to fill a gap in the STEM curricula, taught to 1,000+ students annually   UW   * Evangelized course content and approaches, many of which have been adopted as standards across dozens of classes * Top 30% of instructors, 20% of new instructors * Successfully converted to online for last two months of course * Presented 15 hours of lecture per week, held 10 hours of office hours each week and spent 25 hours a week on content creation while working full-time at Tableau * Converted to an online class for the last two months due to COVID-19 * Worked ~60 hours/week * Did this in addition to Tableau * [Reviews](https://docs.google.com/document/d/1flqp2VXBMQtLc30jmjX8EFxidJ0CkNluVri-yBpyv9w/edit) * [Technologies taught visualization](https://public.tableau.com/profile/spencer.shadley#!/vizhome/UWTechnologies/TechnologiesbyType) * [Covered 103 topics](https://public.tableau.com/profile/spencer.shadley#!/vizhome/UWTechnologies/TechnologiesbyType) including MongoDB, Express, React, Node.js, Design Patterns, Object Oriented Programming and Agile Development * Authored 2,520 commits comprising 172,427 lines of source code * Students spent an average of 31.3 hours / week on the course * Contributed back to community * Instructor knowledge: 4.9/5 * Instructor clarity: 4.6/5 * Instructor engagement: 4.6/5 * Instructor NPS score of 86.96, target of 50 * At least 172,427 lines of code * Based on programmatic measures of success, Spencer performed in the top 20% for first-time instructors of all graduated UW Coding Boot Camp classes, and the top 30% of all instructors (returning and first-time). * Taught HTML, git, CSS, Bootstrap, JavaScript, jQuery, Timers, Node.js, Express, MongoDB, Mongoose, React, VS Code, Heroku, MySQL, AJAX, Sequelize, npm, GitHub, SSH, Command Line, CDN, REST, HTTP, API, momentJS, localStorage, Agile Development, Request-response pattern, Promises, fs, CLI, Postman, Model View Controller (MVC), NoSQL, JSX, Component Pattern, Container / Component Pattern, Babel, webpack, Big O, Algorithms, Data Structures, Single Page Application, GitHub Pages, Responsive Design, SEO, JSON, Object Relational Mapping (ORM), Object Document Mapping (ODM), Design Patterns, Scrum, Kanban, Inquirer.js, Mocha, Test Driven Development (TDD), Jest, Robo 3T, MySQL Workbench, Handlebars, Continuous Integration (CI), Linting, Chai, Service Workers, Progressive Web Apps (PWA), Lighthouse, React Hooks, Context API, Redux, MERN, Web App Manifest, Divide and Conquer, Double Pointers, Sorting, Bubble Sort, Selection Sort, Insertion Sort, MergeSort, Quick Sort, Monkey Sort, Sleep Sort, Graphs, Trees, Binary Trees, Balanced Trees, Stacks, Queues, LinkedList, Breadth-First-Search (BFS), Depth-First-Search (DFS), Hashing, HashMap, Maps, Sets, Binary Search, Greedy Algorithm, Recursion, Dynamic Programming, Memoization, CSS animations, CSS transitions, lodash, https  |  |  | | --- | --- | | **Tableau**, Seattle, WA | September 2016 – Present |   Lead Software Engineer (August 2020 – Present)   * Converting 1.3 million lines of source code for the core Tableau visualization from Saltarelle to TypeScript * Enabling a Connected Experience between Tableau Server and Tableau Desktop utilizing custom protocols   Senior Software Engineer (January 2019 – August 2020)   * Led teams across orgs to rearchitect Tableau Server’s backend, improving Time to Interactive performance by 10,000+% * [Drove decision to remove Internet Explorer support from all products, estimated to save $8.3 million per year](https://www.tableau.com/about/blog/2020/6/upcoming-changes-tableau-operating-system-requirements) * Established new teams in several orgs to improve performance, ensure high quality datasource connectors and more * Fostered Tableau’s web community as the Web Community Driver and through mentorship of teams, engineers and interns   Software Engineer (September 2016 – January 2019)   * [Unblocked eight-figure contracts by building a platform to enable 31 key datasource connectors on Tableau Server](https://onlinehelp.tableau.com/current/pro/desktop/en-us/help.html#creator_connect.html) * Migrated Tableau to a Progressive Web Application (PWA), results showed a page load time decrease of 36% * Improved agile best practices as Scrum Master and security best practices as Security Champion * Implemented various full-stack feature parity gaps between Tableau Server and Tableau Desktop   Senior Software Engineer   * Move to the Web Team * Full-stack web developer * Drove decision to drop Internet Explorer in 2021.3 * Convert Saltarelle to TypeScript * [Built a platform for creating keyboard shortcuts which became the second most consumed UI module at Tableau](https://help.tableau.com/current/pro/desktop/en-us/shortcut.htm) * Presented multiple times on web development to Salesforce engineers with roughly 1,000 live attendees * Presented series on web development with live audience exceeding 1,000 live attendees per talk * Filters * Rewrote the product architecture training for all developers at Tableau * Created a system on Tableau Server to open the user’s current work on the web, retaining unsaved changes, on Tableau Desktop * Fostered the Tableau web development community as the Browser Community of Practice Driver (4/1/19 – 5/5/20) * Advocated for security as Security Champion (1/1/18 – present) and implemented agile practices as Scrum Master (4/2/18 – 6/10/19) * Unblocked eight figure contracts by establishing a platform to enable 31 key datasource connectors on the web – marketed as the top release highlight * Partnered with multiple teams to fulfill ownership gaps, ultimately establishing new teams to improve long-term strategy * 40 people claimed me as a valuable mentor * Received the highest performance assessment rating (exceptional) every year, given to only a select few individuals * Promoted code reuse by modularizing the keyboard shortcuts system into a TypeScript module * Mentored 7 teams   + Data MttW along with another engineer as they were new to the web   + User Experience and Interaction (UXI) as they had hired several new developers and were new to web development   + TabX   + Exporting   + Connectivity new to the web   + ConnectTo – helped to fund the team and was datasource expert   + Browser Everywhere Authoring Team – established relationships with many members and seen as web expert * Rated as “Exceptional” (top rating reserved for the highest ~5% of developers) every year at Tableau * Initiated project to migrate Saltarelle to typescript and was received as the highest valued project of all time * Added support for the ChrEdge browser * Drop mobile authoring * Mentored numerous teams new to web development and created new resources to improve internal transitions to web development * Gave multiple talks to Salesforce on web development with thousands of audience members * Browser Community of Practice Member (3/1/19 – present) * Browser Community of Practice Driver (3/15/19 – present) * Scrum Master (4/2/18 – 6/10/19) * Security Champion (1/1/18 – present) * Foundational Advisory Board Member (1/1/18 – 6/10/19) * Mentored two interns * Created wiki for starting on the web * Ownership of Connecting to Data on the Web * Code style wiki and updates * Worked with Connectivity to remove dependency on presmodels and helped with pluggability * Worked with Tableau Prep to consolidate redundant modules, make architectural decisions around iframes / components * Using Service Workers to fund Browser Client Infrastructure team * Non-blocking UI * Led performance investigation to understand where the performance issues on the web are * Partnered with several teams to fulfill ownership gaps, ultimately establishing a new team * Drove the decision to remove Internet Explorer support from all products, saving an estimated $8.3 million per year * Expanded keyboard shortcuts into a TypeScript module to be consumed in more of Tableau’s products * Connected Experience - Created a system on Tableau Server to open the current workbook, retaining session edits, on Tableau Desktop * Lectured at the Lake Washington Institute of Technology on Big Data, Data Analytics and Tableau * Collaborated with the Lake Washington Institute of Technology to add Tableau to the “Applications of Big Data” course * Worked on various performance projects to improve page load time and interactions on the web * Fostered the Browser Client Community, re-engaging the community with lectures, pitch events and increased collaboration * Architected how cloud connectors integrated with oauth and our Java and C++ backends     Software Engineer, Move to the Web Team   * Scrum Master, Security Champion, Foundational Advisory Board (FAB) member * Advised and mentored the TabX team to ramp up on web development * Mentor for an intern on the team * Represented web developers on the Foundational Advisory Board, discussing potential technologies and infrastructure to adopt * Advised and mentored a team new to web development * Mentored interns on the MttW Team * Presented frequently for Tableau's Browser Client Community (keyboard shortcuts, security, service workers, style, etc.) * Developed various enhancements to viewing, editing and creating a datasource on the web * Wrote scripts to auto-format Tableau's codebase to follow style guidelines and cleanup code * Attended relevant conferences such as CppCon and ReactEurope and shared learning with the developers at Tableau * Interviewed customers to gather feedback on how they were using Tableau Server and learn how they can gain better insights with their data * Implemented various feature parity gaps between Tableau Server and Tableau Desktop * [Built a platform for creating keyboard shortcuts which was used to add 81 new shortcuts and initiated 100,000+ times by customers](https://onlinehelp.tableau.com/current/pro/desktop/en-us/shortcut.html) * Added Cloud Connectors (Google Drive, OneDrive and Dropbox) to the web * Frequently presented for Tableau’s Browser Client Community (keyboard shortcuts, security, service workers, style, etc.) * Wrote scripts to auto-format the codebase to follow our style guidelines * Attended conferences such as CppCon and React Europe, presenting learnings to Tabloids * Found the most bugs in the company * Added a Chrome Extension, Tableau as new Tab, to use Tableau within a Chrome Extension * Adding Service Workers and an App Manifest to the web to make Tableau a PWA * Wrote scripts to publish a code review, apply the changes to another server, start the server and update the review with a link * Interviewed customers on how they use Tableau Server and how the experience could be improved * Interviewed dozens of candidates as a key interviewer for a growing team   Data Move to the Web Team   * Partnered with the Data Move to the Web Team to enable critical data related features on the web * Added the ability to connect to 27 key datasources   + Unblocked several eight figure contracts * [Number one release highlight for Tableau](https://onlinehelp.tableau.com/current/pro/desktop/en-us/whatsnew_desktop.html#ConnectWebData)   + Partnered with Maestro (Tableau Prep) and Connectivity to make this work shareable across all of our products   + Enabled editing and improved reconnecting to existing connections on the web   + First usage of RSA for encryption in our VizClient code * Helped to add the “Data Source Tab” on the web   + Detected unsupported datasources and blocks users from interacting in yet-to-be-built areas   + Partnered to build various features: joins, toggle referential integrity, broken datasource detection, etc. * Incorporated “Mini Whack-A-Moles” to increase product quality * Security Champion * Championed security for our team * Foundational Advisory Board (FAB) member * Discussed which technologies and directions Tableau should move in, representing the browser developers * Represented web developers as a FAB member, discussing which technologies to adopt and what Tableau’s infrastructure should be * SCRUM master * Key interviewer * Mentored another team new to web development * Mentored an intern * Added keyboard shortcut platform and shortcuts * Partnered with several teams to add their shortcuts * Added 40 shortcuts myself * 25 additional shortcuts added by other teams * Within a few months of release the feature was used tens of thousands of times * Added telemetry to see how people are using the shortcuts * Helped to add Cloud Connectors (DropBox and OneDrive) to the web * Adding keyboard shortcuts * Security on the web * Style (planned) * Service Workers (planned) * Wrote scripts to auto-format our codebase to follow our style guidelines * Attended CppCon * Attended React Europe * Built published datasources description * Filed the most bugs in the company * Chrome as new tab extension * Added service workers * Added app manifest * Have written automation tests * Created visualization for every command and network request made to make tracking user’s usages and error rates more accurately * Upon publishing a reviewing, take the changes, apply to another server, start the server, update the review with a link * Interviewed a few dozen customers to better understand how they used the web and how to prioritize our feature building * Partnered with Data Move to the Web to enable many data related features * Added the ability to connect to 27 key datasources, generalized so that most new datasources will also require no extra work * Developed feature unblocking 8 figure contracts * #1 release highlight * Partnered with the Maestro (Tableau Prep), Connectivity and Data Move to the Web teams to make my work reusable/shareable across all of our products * Found and filed 624 unique defects in the first two years of working at Tableau * Modified 1,403 files in the first two years of working at Tableau (the most on the team, top ten browser dev modifications in the company) * Kept the design as a plug-and-play model for the Connectivity team to later enable third parties to add their own datasources themselves * Enabled editing a connection * Enabled reconnect * Partnered with the Data Move to the Web Team to add the “Data Source Tab” on the web * Partnered with Data Move to the Web to add encryption using RSA to the web * Added infrastructure to detect if a datasource is unsupported on the web and block the user from getting into bad situations * Pushed the team to adopt higher quality standards, such as using Mini Whack-A-Mole for each feature before release * Detection for a broken datasource, show red-bang when it is broken * Helped to organize teams to for gray areas of ownership * Created vizzes * Anime * Finances * DougScore * Credit Cards * Technologies * React * C# * TypeScript * JavaScript * HTML * CSS * Jasmine * Stylus * Enzyme * C++ * Splunk * NewRelic * Perforce * git * GitLab * ReviewBoard * Java  |  |  | | --- | --- | | **Bizler**, Austin, TX | February 2016 – February 2017 |   Co-Founder and Lead Developer   * Stealth Startup * Lead developer, technology expert and Scrum Master for a company of five people * Decided which technologies to use for our applications such as Azure, ElasticSearch, Docker, TypeScript, Mocha and JSDoc * Implemented a cross platform RESTful API using MongoDB, Express, AngularJS and Node.js (MEAN) * Designed the mobile and web applications user experience, flows and desired features * Designed the mobile and web application user experience, flows and desired features   **eBay / PayPal – Global Operations Architecture Team**, Austin, TX May 2015 – August 2015 |  |
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Architect Intern

* Researched and owned two end-to-end projects without a prescribed structure
* Clickable Architecture Project
* Converted static images found in PayPal's development wiki pages into live UML diagrams
* Featured inline comments, granular permissions and subscription updates to changes
* Completed and in production 11 weeks ahead of anticipated completion
* Unified Alerts Project
* Aggregated emailed alerts asynchronously in real-time to unify disparate alert systems
* Single-page web app using the MEAN (mongoDB, Express, AngularJS, Node.js) stack
* Implemented using an MVC (model-view-controller) paradigm with RESTful APIs
* Featured an SSL connection, live chat, Asynchronous JavaScript and JSON (AJAJ) and responsive design
* Incorporated Socket.io, Bootstrap, Chart.js, Dygraphs, Context.io, Almsaeed Studio, jQuery and Bootbox
* Performance improved throughout the project (load time decreased 20X by polling asynchronously, caching by 100X)

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| **IBM – Software Group**, Austin, TX | May 2014 – August 2014 |

Software Development Intern

* Programmed and designed an end-to-end web application to use Reference Data as a Service (replacing several systems)
* Written in Java, JavaScript, HTML5 and CSS3
* Deployed on BlueMixwith RESTful APIs
* Node.js and shell scripts published JSON data from a SQL relational database to a non-relational NoSQL Cloudant database
* Presented to Senior Management and Executive Leadership
* Created Reference Data Management solution in the cloud
* Programmed and designed a web application to access reference data using Java, JavaScript, HTML5 and CSS3
* Hosted application on BlueMix
* Combined Node.js and shell scripts for server-side scripting
* Incorporated non-relational NoSQL database (Cloudant) for the cloud database
* Established SSL for secure connection between our server and web service
* Worked with Agile Development methodologies (SCRUM)
* Made many enhancements to efficiency (such as switching from synchronous scripts to asynchronous scripts for publishing data, improving efficiency by roughly 1000%)
* Lead presentations multiple times to Executive Leadership throughout the internship

**Android>Apple (Mobile Application Development Company)** August 2011 - Present

**Founder and CEO**

* Develop applications (one of which Amazon selected as their “Free App of the Day”)
* Led one to three people during development phases
* Platforms: Android, Blackberry, iOS, Windows, OS X, Flash, PS3, XBOX 360, Wii, Chrome Web Store and the Web
* Published in: Google Play Store, Amazon AppStore, Nook Store, Blackberry, SlideME, Opera, GetJar, Appia Stores, wecreatedit.com, FileDir.com

**Garland Independent School District**, Garland, TX Summer 2012/2013

**Course Author and Advisor**

* Authored new Mobile Application Development Course for the eight high schools of Garland ISD (created and wrote the course; including Presentations, Projects, Tests, Lectures, supplemental Android application, etc.)
  + Advised creation of Game Development, Computer Science I and Computer Science III Courses
  + Created a flashable system image for the 28,000+ computers in the Garland school district for Android Development
  + Updated and adjusted many online courses for high school and middle schools in Garland ISD

**Albertsons Grocery Store** June 2011 – February 2012

**Customer Service Clerk**

* Worked directly with numerous customers each day regarding customer satisfaction issues

**TECHNICAL SKILLS**

* Five years of Programming experience; Three years of Graphic Design experience
* Programming Languages: Java (5 years), XML (3 years), C (1 year), Javascript (1 year), HTML (1 year), JSP (1 year), x86 ATT Assembly (1 year), Lisp (1 year), Dark Basic (1 year), CSS (1 year), JSON (basic knowledge)
* IDEs: Eclipse, Unity, NetBeans, Notepad++, Sublime, BlueJ, JCreator, Dark Basic Compiler
* Other skills: Responsive Design, Agile Development (SCRUM), Development for Android, iOS, Blackberry and websites, Hadoop, MapReduce, Cloudant, Huffman Compression and Decompression, Git, Adobe Photoshop, VMWare Player, GDB, , Adobe Fireworks, LoggerPro, LabQuest, DB2, Relational Database, Database
* Operating Systems: Unix, Linux, Ubuntu, Windows, OS X

**COMMUNITY INVOLVEMENT/LEADERSHIP**

**Organizations/Activities**

* Association for Computing Machinery, Computer Science UIL Team Captain, Calculus Club Secretary, Calculus Bowl, National Honor Society, National Spanish Honor Society, National Junior Honor Society Treasurer, Student Council, Senior Leader at High School for younger students, Basketball, Table Tennis, Football

**Volunteer Experience**

* Judged Computer Science UIL Competition (2014), Relay for Life (2007 and others), South Dallas Food Pantry (June 2011), Keeping Rowlett Beautiful (March 2009 - Present), Church/School Carnivals (October, April for four years plus middle schools October 2007), Vacation Bible School (June 2008)

**HONORS AND AWARDS**

Tens of thousands of application downloads, various prizes from App Contests (cash, phones and tablets), Computer Science II Student of the Year, Two-time Rotary Club award recipient, Distinguished Achievement Graduate, Four-Time Academic Letter recipient, AP Scholar, National Society of High School Scholars, Duke Scholar, Star Scholar

**EVENTS**

* Google IO 2013
* University of Mobile Application Development (uMAD)
* React Europe (2018)
* CppCon (2017)

PROJECTS AND TECHNICAL SKILLS

**Projects** [Created visualization of anime data based on scraped information from MyAnimeList.net](https://github.com/spencer-shadley/AnimeExporter)

Developed an Android app to scan and run hand-written code as part of a four person hackathon

Constructed a school district course exception system using Oracle APEX

Wrote a [Pascal Compiler](https://github.com/spencer-shadley/Pascal-Compiler) to convert source Pascal code to executable assembly

Built a [personal portfolio website](http://spencer-shadley.github.io/) using Jekyll

Created an operating system including threads, virtual memory and file systems

Deployed a website teaching Android development

Programmed Huffman Compression using Huff Trees

**Languages** Proficient in Java, JavaScript, C++, C, SQL, HTML5, CSS3, JSON, XML, JSP

Familiar with Shell Scripting, x86 Assembly, Lisp, Pascal, Python, Mongo Query Language

**Software** [Git](https://github.com/spencer-shadley), Travis CI, GoogleTest, Gcov, Doxygen, GDB, Confluence, Valgrind, Oracle SQL Developer, SQL Developer Data Modeler,

Oracle APEX, FireBug, BlueMix, Google App Spot, Apache Tomcat, VMWare Player, Photoshop, IntelliJ, Eclipse, Visual Studio

**Technologies** Service Workers, React, Redux, Jasmine, Jest, Enzyme, git, perforce, CSS grid

**Methodologies** Object Oriented Design, Agile Development (SCRUM), REST, Continuous Integration, Unit Testing, Code Coverage,

Functional Programming, Responsive Design, UML, NoSQL, Relational Databases, Graph Databases, Hierarchical Databases