

Institute of Technology - End of the Quarter Colloquium Summer 2015

JOY 206 9:00am – 3:30pm
Schedule of Presentations

Session One 9am - 11am (Sign ups start at 8:45am)

Directed Reading: Dumsor Mobile Application

**Faculty Sponsor: Menaka Abraham
Jacob Langholz**

The Dumsor Mobile Application project leverages Microsoft Azure in coordination with an Android Mobile Application to record and display recorded power outages. Springing from the need to map power outages related to the Dumsor political conflict in Ghana, the functional requirements of the application were to have a simple, easy-to-use interface. This interface allows a user to log in using either Facebook or Twitter, or if they wished to remain anonymous, a Guest user account. After logging in, the user is then provided the opportunity to either record the power state (on or off) or view a heatmap of the recorded points. When the user records the data, a FusedLocationProvider harvests the data, and pipes this along with a timestamp and user data to the Azure Mobile Service, which then places it in a storage table. When the user opts to view the heatmap, this same service pulls the data for the time window from azure and displays it on the screen. This app will be provided free of charge to the users, as it aims at being as accessible as possible to promote use. The easier it is to acquire and use the larger and more frequent the user base will be. A larger and more consistent user base will generate more accurate and note-worthy data that ultimately can be displayed and analyzed to generate conclusions and report the current events of the conflict with high accuracy in real time.

Full Stack Software Development Engineer

**Faculty Sponsor: Menaka Abraham
Jacob Langholz**

As a full stack developer at Share Interactive, I have had immense exposure to a lot of different technologies. Share Interactive is a consulting company, where I started working as a Full Stack Software Development Engineer on June 15, 2015. My first project was to work on the company website. This was a challenge, as my experience with AngularJS and web development were minimal. This project has been ongoing, implementing features whenever I have downtime. My second project, which was one of the reasons I was brought on, I am limited on what I can say, as I had to sign an NDA. What I can say is that I created a proof of concept for a system that would use R, PMML, Java, and SQL Server 2012 to perform analysis on large amounts of data for a web app. The two major things I learned about with that project were what PMML actually is, Predictive Modeling Markup Language, and how to use that file, which would be generated from R code, with a java evaluator to return a value or set of values after evaluating the data stored in the database on the SQL Server instance. All throughout, I also did web development jobs we were given by a large telecommunications company, which involved coding webpages and email templates. Finally, the last project that has just started up involves me learning to work with Kii and NodeJS to do content aggregation, leveraging separate APIs to compare data.

Globalization through Localization**Faculty Sponsor: Menaka Abraham
Brent William**

The growth of BookingSuite over the last year has been tremendous, as they have gone from a small startup providing front end UI and back office support to a small clientele of hoteliers, to partners with one of the largest Online Travel Agencies (OTA) in the world, Booking.com. Managing this growth is no small task. However, as I have learned over the last couple of months, there are many practices in place that help facilitate manageable growth as they expand their product. As a part of the Terminus team I experienced first-hand how the Agile Framework and JIRA ticketing system can be employed to keep a team focused on attainable goals in a reasonable time frame, and how testing and quality assurance practices play an important part in releasing an error free and viable product. My major role throughout my time with Terminus revolved around writing scripts to search web databases for new translations for Strings present in the Terminus project. As BookingSuite has partnered with a global company, this is no small task, and is important for globalizing our product to better accommodate and convert a growing population of diverse customers.

Building a Web Services Registry**Faculty Sponsor: Menaka Abraham
Reagan Middlebrook**

My task over the summer was to research web services registry technologies (the part of a service oriented architecture that allows users to find available services and know how to invoke them), help select the right one for this prototype, and implement it. This was a complicated task that required a large number of tools and technologies that were outside my experience, including relational databases, web applications, and servers. This presentation will explain what technology was chosen and why, along with how each tool supported the finished web services registry.

Integration of SAP Fiori at Weyerhaeuser**Faculty Sponsor: Menaka Abraham
Rithvik Lagiseti**

For over a century, Weyerhaeuser has been growing trees and making forest products that impact lives in fundamental ways. The company specializes in wood products including softwood lumber, pulp, paper, and cellulose fiber. With plants and customers all over the world, Weyerhaeuser would need an incredibly powerful enterprise resource planning (ERP) system to collect, manage, and store data from the various lines of business. For that reason, the company adopted the SAP ERP system in 1999. SAP (Systems, Applications, and Products in Data Processing) is the world leader in ERP software with over 282,000 corporate customers worldwide, making it the fourth largest software company in the world. Since Weyerhaeuser adopted the SAP ERP system in 1999, very little has changed in terms of workflow and user experience (UX), enter Fiori. SAP Fiori is the reimagined UX for the SAP ERP system, focused on being role-based, responsive, efficient, coherent, and delightful. Overall, SAP Fiori makes huge leaps in terms of performance, workflow, and interaction. However, since the SAP ERP UX has hardly changed since Weyerhaeuser's adoption, the integration of Fiori is a daunting task considering the new UX will need to reevaluate and reimagine the over 400,000 transactions in the system. With a solid understanding of the current SAP system and customization through ABAP and SAPUI5 programming, we are integrating as much of SAP Fiori as possible, changing the way Weyerhaeuser operates and vastly

improving the daily lives of our employees and customers.

Android Development at Prepared Response

Faculty Sponsor: Menaka Abraham

James Stump

Prepared Response is a local company in the business of response technology and crisis management. Their main product, Rapid Responder, is a multiplatform “all hazards crisis management database system.” The system provides site stakeholders and emergency responders quick and easy access to critical building information useful for various disaster and emergency response and preparedness. Rapid Responder is currently available as a Windows desktop app and a web app, and they are currently developing native iOS and Android apps to be used on tablets. My main tasks as an intern have been to assist in the development of the Android app. I have also been putting on an Android familiarization course for the development team, giving an introduction and training on the basics of Android development.

Faculty Sponsor: Yan Bai

Brian Bui

My internship is for the Seattle Public Schools at the John Stanford Center in downtown Seattle. Their current issue is that they are still running XP machines, when Microsoft dropped support for them last year of April for the enterprise version. So it's my job to upgrade the building to Windows 7, so that there won't be any vulnerability to the district due to XP. The main problem is that the users of the district keeps years of files scattered around the network and local drives, so it's difficult for the district to just push out an upgrade without losing the files of its employees. My responsibilities were also expanded to do some work with active directory. Making sure users have the access they need or machines are placed in the correct OU.

Faculty Sponsor: Yan Bai

Josiah Benoit

To be provided

Session Two 10:30am – 12:30pm

Defense in Depth

Faculty Sponsor: Yan Bai

Mohamed Essoufi

My presentation will be about figuring out if Home Directories are in plain text or not and what can we do better to protect our Home Directories and to enforce our system's defense according to the defense in depth security model.

Faculty Sponsor: Yan Bai

Duke Hefner

My presentation will focus on discussing the security concerns I was addressing with a previous employee. I was tasked with determining if there was any questionable files or programs inside the previous employee's workstations.

Faculty Sponsor: Yan Bai
Teodorico Divina

Weyerhaeuser have been growing trees and developing its cellulose fibers that have enhanced people's lives. A company built, by its' founder Frederick Weyerhaeuser. In 1900 Weyerhaeuser started with 900,000 acres of timberland, three employees, and a small office in Tacoma, Washington. Today, Weyerhaeuser have now grown to become one of the largest sustainable forest products companies in the world. The growth also meant growth in technology. Client Solutions team provides day-to-day support to meet current and future business needs. My role with the team is to help support current client footprint and testing/validating. The first project was to test/validate the vulnerability patch for Flash Player that was deemed Priority 1 and a Critical update by Adobe. The leak of the exploit was from a hack of another hacking firm based in Milan, Italy that have been known to sell tools unethically. This presentation will be more of a demonstration of how the exploit will actually works.

Helping the Community Through Information Technology
Faculty Sponsor: Marc Dupuis
Gabriela Aranda

I am interning at small company called CFuze. They mostly do contract work and specialize in designing, creating websites and other applications. What I have been doing is learning programming languages such as PHP and applications such as Word Press. Through this, I will be able to help clients of CFuze improve their businesses while making sure their site is safe and secure. This is just the foundations of many more projects to come like creating a security plugin and advertising it in a store for users to install.

Business Analyst
Faculty Sponsor: Marc Dupuis
Osaseen Gollen

Provide engineer level, technical project and business analytics support to drive success of the IT Service Management (ITSM) Project. ITSM is a strategic approach to designing, delivering, managing and improving the way information technology (IT) is used within an organization. The goal of IT Service Management is to ensure that the right processes, people and technology are in place so that the organization can high quality IT service and timeliness of delivery.

Faculty Sponsor: Charles Costarella
Sumitpal Rai

To be provide

Toray Composites

**Faculty Sponsor: Marc Dupuis
Ericka Baker**

Toray Composite is the leading manufacture for PrePreg Materials. PrePreg is a composite fiber material used in the aerospace, automotive, and sporting goods industries. This summer I have been a Client Technologies Technician Intern. My primary role has been to upgrade the test lab from Win XP to Win 7. Test lab is responsible for ensuring the material has been created correctly and it is crucial that the systems are returning accurate test results.

Session Three 12pm – 2pm

**Faculty Sponsor: Orlando Baiocchi
Rahul Deshpande**

To be provided

**Faculty Sponsor: Matthew Tolentino
Sean Douglas**

To be provided

**Faculty Sponsor: Mohamed Ali
Leena Singhal**

We at Tyemill are developing a portal for managing profiles of organizations with an investment point of view for a financial firm based in New York. The portal provides a web interface easing the task to classify firms based on various criteria's chosen by investors.

The portal takes input data from investors in the form of documents relevant to the firms which directs the classification of firms. The classification allows investors to create filters and write complex queries to search interesting firms they could invest in. For example the search could be for a firm with high growth in small cap market dealing in consumer goods based in NY with recent acquisitions.

To build the website we are using "Ruby on Rails" as backend with HTML, bootstrap, CSS3, jQuery and JavaScript for front-end rendering. My contributions to the project has been on building user authorization and management of groups for those users with assigned privileges. Users and groups data is stored in postgres database.

As a side project, which was a starting point for me to learn building modularized and responsive website using ruby and ruby gems. Me and some of my colleague interns as a team created a Sports blog (Football) where registered users can create pages for their favorite teams and also post comments for registered teams.

Reconciliation of Patient Data

Faculty Sponsor: Mohamed Ali

Mounica Arroju

Practice fusion is a web based electronic health record (EHR) platform for patients and doctors. It is a free EHR system that serves the needs of small medical practices around the US. It has about 140000 doctors as users. I worked as a software engineering intern at Practice fusion during the summer. My main goals for this internship were to refine my programming skills, learn the design principles being used in the industry and get hands on experience in building software as a service. As more doctors are adopting Practice fusion for record keeping, there is lot of business potential in partnering with the healthcare companies for this clinical data exchange. My internship project was focused mainly on document reconciliation. This involves parsing an xml structured document of patient's medical history obtained from a partner. It provides an easy access for the doctors to save this medical history into the patient's chart. I worked on building a service to fetch the source of each allergy recorded in the patient's history and display it in the UI. The technology stack was mostly C#, .Net and CSS. I also got hands on experience with database design and learnt a few design principles of service oriented architecture.

Feed Relevance Project at Salesforce

**Faculty Sponsor: Mohamed Ali
Yingying Xia**

Currently, the feed products at Salesforce does not have ideal metrics and dashboards in place to measure the health of the feed from a relevance perspective. By working on data collection, metrics definition, data preparation, model learning and evaluation, the intern project will initialize the improvement of the feed relevance. The main tasks of my projects are

- (1) understanding and analyzing current loglines and show the improvement of log fields
- (2) develop offline simulation to evaluate current sorting mechanism and work on the improvement

Creating a Scouring Model for Instagram Content Using Machine Learning

**Faculty Sponsor: Mohamed Ali
Manali Bhalgat**

About ReadyPulse

ReadyPulse is an enterprise content commerce platform that uses patented technology to surface the highest quality and authorized social content produced by brand ambassadors. Digital marketers can quickly associate their products with the content, and easily display the content in a variety of configurable display options. Using the Pulse Marketing Suite digital marketers can find brand ambassadors across social media, run and promote marketing campaigns on-demand, display authorized, and high quality content in context of digital commerce experiences.

Introduction

The goal of the project is to help brands identify the best user generated content crawled from social networking sites like Instagram, Facebook and Twitter. Every content piece is given a score, called Pulse Score, which indicates the capability of the content to generate leads when posted on the brand website.

The current technique for calculating pulse score for content is rule based and it does not scale out to

the huge amount of content that is being crawled every day. With the existing scoring model, if images are sorted in decreasing order of pulse score, it is observed that many images which are not so great appear in the top order. This means that the number of false positives is high. The project aims at reducing the number of false positives to 10 percent by using machine learning techniques to build an intelligent and robust scoring model.

The machine learning task is to build a classification model that classifies each new content as good or bad given the values of different attributes for the content. Content is typically an image. As part of the project, image processing techniques have been used to extract features like image quality, size, dominant color, etc., and text analysis techniques to get sentiment score of the text associated with the image. Other features used are engagement signals on social media and content creator information. The classification probabilities are used to derive pulse score for content. One of the major challenges of the project is that the dataset is highly imbalanced. Several under-sampling techniques are used to address this issue.

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Transgroup Worldwide Logistics Internship

Faculty Sponsor: Bryan Goda
Levi Bingham

At this internship I am doing a re-write of an accounting program called "UnRecapped". The original program was written in Delphi, and has become dated and hard to use on current web browsers. I am re-writing it using ASP.Net and using the Entity Framework. It lets the accounting department know why invoices have not been paid yet, and allows a place for communication about these invoices between stations and the corporate office. It also allows some functionality for corporate to accept/deny requests for extensions, along with the ability to remove an invoice from a report or to delete it all together, or even to transfer reports between stations.

Virtual Reality with Motion Integration

Faculty Sponsor: Bryan Goda
Brandon Fjellman and Michael Dean

Virtual Reality is an emerging technology with endless potential. Using the knowledge gained through our degree here at UWT, we set out to learn how to implement Virtual Reality in custom designed environments and integrate inexpensive motion capture devices to create a truly immersive experience.

Making Big Changes with Small Code at Stellar

Faculty Sponsor: Bryan Goda
Jacob Peterson

Developed code snippets in C# and SQL to insert into Stellar's ordering and inventory software (called Prophet 21) to improve accuracy, speed, and ease of use. Developed SQL procedures to run on a schedule to clean up old data and streamline work processes.

Identity & Access Management Modernization (focus on Public Key Infrastructure)**Faculty Sponsor: Bryan Goda****John Sutherland**

Costco continues to expand globally and their current infrastructure must be brought up to date. In order for Costco to continue its success, many modernization projects must take place to remain competitive in the marketplace. The goal of this project is to modernize the Identity & Access Management of Costco by updating their systems, updating their processes, and having the proper hardware to support the team's goals. This will be accomplished by proper communication of processes and requirements being met at the date they are due. The Identity & Access Management team is not only vital to the operations of the IS department, but also the operations of the warehouse and Costco as a whole.

Storage Array Automation**Faculty Sponsor: Bryan Goda****Manvir Singh**

The main goal of this project was to automate the creation of volumes, as well as the connection to volumes, on storage arrays. Instead having the user make a request to the team to create space for them on the storage arrays, they would simply be able to go on the team's website and allocate it themselves (with some limitations, obviously). This frees up the team to be able to focus on things that are more important.

Concur Travel Stream Lining Vendor Management**Faculty Sponsor: Bryan Goda****Maurice Shaw**

Occasionally the technical support team at Concur needs to edit or add a new travel vendor to their database. The current process used at Concur requires developers to be pulled from their projects to make changes to vendors. Our task was to enhance their existing codebase by building an interface that the technical support team could use to search, edit and add new vendors to their database, in real-time.

This required knowledge of JSON, Resharper, HTML, JQuery, C#, Sequel, Asp.Net, the Model View Controller design pattern, databases and much more. Using the Asp.Net framework we implemented the new features then tested them via proprietary test harness. The code was then submitted for review by Concur's senior developers. Once the review was completed, we made adjustments to the code which required another review. Finally, the code was included in the monthly release.

The aforementioned process from a customer's perspective could take up to three months. This process will be replaced by the new features we implemented. The technical support team can make changes to the database instantaneously. This will allow employees to focus on other projects and enhance the overall customer experience. But most importantly, these features will allow changes requested by a customer to occur relatively quickly.

Concur has great a culture in-place with a nice work-life balance. Concur ensured that we had a summer to remember by scheduling events such a trip to Safeco Field to watch the Mariners from a suite. There were events to allow the interns to network with the company's top executives. From the

popcorn machine to the glass office doors the atmosphere at Concur is very inviting.

Software Development Cycle Experience

Faculty Sponsor: Bryan Goda

Nabil Sutjipto

Agilysys, inc. is a software company focusing on creating solutions for the hospitality based industry (hotels, restaurants, casino, etc.). Starting out as a hardware company, it saw the potential market grew if the company switched to SaaS (Software as Service) as their main product. The Bellevue team is separated by the product except one, the Platform team; what the platform team is responsible in building is the boilerplate or base features that are expected to have in many of the other services. As an Intern, I am introduced to a full cycle of feature development from scratch to finish. What this means is to design a feature, build it, create the unit and integration test, integrate the feature to existing project, deploy and of course being on-call after deployment to hold responsible of the feature being deployed; all while following the team Sprint Schedule. The team uses Java as the core language and python as it's server side deployment language.

Full-Time Java Developer

Faculty Sponsor: Bryan Goda

Ridwan Abdilahi

I'm currently an employee at Expeditors International of Washington Inc. and I am using my full time job as internship credits. I work as a java developer on one of our companies wen applications and have been able to add so much knowledge about software development in just a few short weeks. I've been taken under the wing of a senior developer who has helped me learn the ins and outs of being a developer in the real world and how much team work is really involved in every aspect of software development.

Session Two 10:30am – 12:30pm

Faculty Sponsor: Bryan Goda

Shewangizaw Gebremariam

To be provided

Faculty Sponsor: Bryan Goda

Hetal Ajudia

My topic is on Human-Computer Interaction, which covers different methods to keep computer softwares simple and user-friendly. The methods are activity theory, user-centered design, user interface design, and value sensitive design. In modern days of technology, these methods focus on how the software technical systems are depended on various experiences that users want to have. Each of these methods have its own techniques which make human-computer interaction easier.

Site Redesign Center for Data Science

Faculty Sponsor: Andrew Fry

Lara Jones

The Center for Data Science proposed a complete rework of their existing site to include a modern layout, dynamic graphics and a way to appeal to potential donors and partners. This internship focused on creating a wireframe and beginning to map HTML/CSS/JS onto the Drupal framework. The summer quarter concentrated on the design phase and creating a wireframe that satisfied all the parameters.

Building an Energy Management Information System (EMIS) to monitor, measure and report on energy consumption at industrial facilities

Faculty Sponsor: Andrew Fry

Ben Cassidy

Utility providers require increased capacity over time to meet the needs of a growing population. The rapidly increasing financial and environment costs of fossil fuel consumption demand that much of this increased capacity be delivered in the form of conservation – primarily through reduced energy consumption by their largest consumers. Cascade Energy works with industrial facilities to reduce their consumption of energy through efficiency activities – site tune-ups, process changes, and capital projects – in order to both reduce the operating cost of these facilities and realize goals of utility providers to increase capacity through efficiency. SENSEI is an Energy Management Information System (EMIS) that Cascade uses to help customers monitor, model and reduce the cost of their energy consumption. SENSEI is a Software-As-A-Service (SAAS) application built and delivered in the Amazon Web Services (AWS) cloud. Features include administration and configuration of users, companies, sites and projects; lightweight project management tools; formula builders for creating baselines and regression models; and graphing applications for creating and publishing complex views of customer energy data.

Through sophisticated architecture and tool choice, the SENSEI team takes a DevOps approach to both building and operating this platform for Cascade’s customers and partners. SENSEI employs microservices architecture for separation of concerns and increased fault tolerance. The infrastructure consists of virtual servers hosting Docker containers connected to both RDBMS and schemaless databases, programmed in a variety of languages and frameworks.

Company Sponsor: Chris Cortez - Director of Development Operations

Oasis Tea Zone Mobile App

Faculty Sponsor: Andrew Fry

Bichloan Phan

Oasis Tea Zone is a family owned business that started back in 2001 with their original location being in International District in Seattle, WA. They offer traditional style Taiwanese bubble tea in addition to other blended and shaken beverages unique to their store. This business has expanded and now there are branches on the Ave by the University of Washington and in Renton, WA.

The purpose of this app was to help this business stay current with competing stores and offer a new medium to reach their tech savvy customer base. Oasis is currently utilizing social media outlets such as Facebook, Instagram, and store website to promote and market themselves. Now with this app, they have a product that truly represents their business and allows them to reach their customers in a more

effective way.

Responsive Web Design at Avue Technologies

Faculty Sponsor: Andrew Fry

Brian Dennis

Outlining the different methods that can be used to make your website or web-app responsive. Among these are using percentage values for widths of elements instead of hard-coding pixel values. Using media queries in your css files and creating dynamic JavaScript files to manipulate the structure of your site at different widths are also great solutions. Examples will be shown to clearly solidify the benefits and downfalls of the various methods

Directed Reading

Faculty Sponsor: Bryan Goda

Marwa Abdulwahab

My topic is on Embedded Systems, which is a computer system within a larger electrical system with a real time computing constraints. The methods are defections of what is embedded system, interrupts synchronization (concept of interrupt synchronization, edge-triggered interrupts), hardware software synchronization (ex. Basic performance measures for I/O interfacing, Keyboard interface). Benefits of embedded systems in modern technology are that it's faster, cheaper, more reliable, and smaller.

ASP.NET Web Development with MDC

Faculty Sponsor: Andrew Fry

Joshua Moore

This summer I've worked with MDC on their C# ASP.NET web application. While working with them I have learned about C#, ASP.NET framework, Entity Framework, and both independent and collaborative work.

C# as a language is very similar to Java, but there are a few things it does differently, like nullable variables, namespaces, and some syntactical differences. The main challenge was learning .NET and the other frameworks and libraries MDC uses. ASP.NET has its own way of organizing your code that is enforced by the framework, which creates a unique workflow. Another framework I worked with is Entity Framework which allows you to work with your database programmatically using objects to represent tables. This was a new way for me to work with backend data, a hybrid of regular model classes and relational database tables. In this internship much of my work was independent, learning what I needed to know and implementing it on my own. However I still had a manager and a small team, so I had to touch base with them and coordinate my efforts.

Session Three 12pm – 2pm

IT Service Desk

Faculty Sponsor: Andrew Fry

Naomi Afereti

For my internship this summer I decided to work at the IT Service Desk at Highline College. During my internship I was able to work on customer service skills (HCI), develop more group work skills (technical

teams), and I applied some skills from basic computer knowledge.

Most of my time spent at the IT Service Desk was troubleshooting either in person (students/ staff and faculty in the open lab), on the phone, or through email. While troubleshooting I learned that researching and where to look at is very important especially if the answer/ solution is needed right away. I've also spent time going on "on-call" runs which were basically setting up computers during department relocations, fixing a physical problem with wiring or replacing an item.

All in all, my internship was a great experience and I look forward to working on more projects after the quarter.

BECU Experience Design & Implementation Internship

Faculty Sponsor: Andrew Fry

Leda Rezanejad

BECU is a local non-profit credit union; I was brought on as an intern to analyze the data brought in from their social media platforms, and offer advice on how to increase engagement and interaction within their profiles. Compared to many credit unions' BECU out ranks most when it comes to social media, however there is very little engagement with the actual content and BECU is not able to establish the online community they want. So why does BECU care? The new generation and new form of marketing is primarily online; to avoid understanding their audience and opening another channel of communication through social media, they risk the chance of falling behind and losing touch with their members. In order to analyze this problem and narrow in on a solution, I spent some time on the actual social media sights (primarily Facebook and Twitter) to understand their audience and get a feeling for where they stand. To follow, I did some general research on competing banks and credit unions and their social sites, as well as basic techniques that drive engagement and interaction up. As a last phase I spent time reading through the data BECU receives from a company called Simply Measured, and determined in what areas they were lacking and what we can do to improve them. In conclusion there are a number of ways BECU can improve engagement on their social sites, to begin; a target audience with targeted content would attract interest. Scheduling posts and responses during peak hours and days would increase their reach and impressions, and promoting engagement through prizes and competitions would encourage followers to participate. Overall BECU's goal to create an engaging and interactive community online is something they can accomplish with some minor tweaks and a clear direction.

Faculty Sponsor: Ankur Suri

Ahmad Kamiab

To be provided

Data System

Faculty Sponsor: Ankur Suri

Alain Mizero

The purpose of this internship is to evaluate and analyze current Washington Access Fund –WAF technology and make recommendations. WAF offer loans to low income residents of Washington State.

Currently, the loan applicant relationship with WAF is a one-way interaction. The plan is to offer a two way dynamic relationship between loan applicants (front end) and the WAF loan administrator (back end). This will require either to design a relational database with a GUI or to buy a third party application to do the job and the end option should be available on the web for remote access. The advantage of the latter is the third party application vendor must have been tested and proven to be of a high security standard towards Washington Access Fund clients' sensitive information. The first phase of the project involves analyzing the current process of incoming applications. The second phase is to normalize the database. The third phase is to evaluate the compatibility with the existing legacy application. The last and significant phase will be to test and deliver the application documentation to the application provider and confirm the security standards. This will allow the clients to have their applications at their fingertips and if a loan is approved to see the status of due payment. The two way dynamic relationship adds openness and accountability for WAF and their clients.

Faculty Sponsor: Ankur Suri
Martin Kiongo

My presentation examines my experience as an IT intern at one of the biggest timber and timber products – Weyerhaeuser. I clarify the expectations I had going to this internship, the technologies that I was able to apply from my classes at UWT, the projects that I am working on and a broad overview of my expectations from this great opportunity. My experiences from this internship are based on the projects I am working on at the company. Additionally, I reflect on my experiences from my interaction with my supervisor and mentor, colleagues, as well as with customers. I will explain how working for a business company is different from working for an IT or software company and how it has forced me to shift my perspective on the role of information technology in business.

In my presentation, I will examine how my classes prepared me for some of the projects I have been working on, what new technologies I have learned and continue to use every day as well as challenges I have faced so far. I will discuss how the various class projects have prepared me in dealing with teammates, customers as well as non-technical people at work. Finally, I will explore what plans I have for the future in the IT industry.

Archived Data Loading: Flatbuffers to Parquet
Faculty Sponsor: Mohamed Ali
Devang Patel

We have all the data collected so far into Flatbuffer files. Flatbuffer files are basically a binary file written with some predefined schema. Each log entry or every data instance is being stored as a single flatbuffer object. Reporting tool needs run multiple queries over a large data base based on the customer's demand. Flatbuffers are inefficient for these queries. In order to run queries efficiently we are proposing to use the parquet file format. We are reading in the data from these flatbuffers and load them into parquet file format. Apache Parquet is a columnar storage format available to any Hadoop project regardless of the choice of framework. We can directly load or write the parquet files using Apache Spark. One can query the parquet files using the simple SQL queries. After loading all the historical data, we will convert the current incoming streaming data queues directly to parquet files. We will convert the Apache Kafka streams to parquet files for current use and also to flatbuffer files for cold storage system.

Mean Quality Assurance**Faculty Sponsor: Andrew Fry****Astam Aliyev**

Everybody knows that small startups, big companies like Google, Microsoft, and Apple have a vital working unit that grants their success and existence. Software developers are people who build a skeleton for an amazing idea, who work hard in order to provide many customers with software that they will use and love. Almost all computer science students are studying in order to become a Software Developer. However, not everybody knows that behind dramatic engineering success there are people, who work as hard as Software Developers. Today, I want to talk about QA, and how to become a good QA unit in my understanding. In my presentation I want to share with you what I've learned and experienced during my summer internship at Booking.com

MultiCare Internship**Faculty Sponsor: Andrew Fry****Su Min Park**

I started to work at Multicare as intern since July 8th. My priority area is Security but I also involved in Database too. I will introduce MultiCare people, what tools did I used, projects that I involved, and future stuff.