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## YARED ALEMU SONAL JAIN

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LINKEDIN.COM/IN/YARED-ALEMU-  
PH-D-341A8979

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**Required Skills:** Responsive Web Design, Human Centered Design, Workflow/Process Optimization, experienced java developer, analytics/dashboard application

### **Preferred Team Communications:**

Slack, GitLab or Conference call

**Data Sources:** We have 23,000 patients and 4-years' worth of clinical data for our analytics dashboard pilot. Our current pilot collects directly from patients and families, including Voice/Speech sample that we are training ML analytic environment to be able to detect and predict the severity of mental disorders

### **Other Items:**

We have 4 interns currently that the group may also work with. We meet at ATDC every Friday for team meeting

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## MACHINE LEARNING VOICE/SPEECH ANALYTICS TO IMPROVE BEHAVIORAL HEALTH OUTCOMES FOR AT- RISK YOUTH

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TQI is currently doing a pilot, with the sample size of 8000 patients; patients are currently receiving mental health services with 2 behavioral health providers that specializes services targeting low income and at-risk youth. One of our pilot sites are in Atlanta, targeting youth in inner-city youth and our other pilot site targets at-risk youth in rural Georgia. We provide a tablet for all the psychotherapist, which comes with our Android based app to collect and give feedback to psychotherapist in real-time. In addition to using a more traditional psychological outcome survey to track progress, we also collect a 90-seconds speech sample that we will be analyzed in our Machine Learning Platform to determine if there are other signs of emotional distress that the psychotherapist should pay attention to as part of the treatment process.

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### PROJECT OBJECTIVES

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In order to improve the use and accessibility of data at the time of service, this project will work on the mental health provider team to using a FHIR enabled HER. Mental health treatment is provided by multiple professionals for this population and the accessibility of data at the time of care is essential to improved treatment outcomes.

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### SUCCESSFUL PROJECT

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**Clinical Therapist/Care Manager Interface:** This interface gives therapist access to their patients participating in TQIntelligence pilot and organize scores in the way that is meaningful and could be easily accessible and useful to drive the treatment process. Outcomes data that is collected every three weeks while the patient is in treatment, presented to increase the Therapist adjust intervention based on data. This looks like both a survey input requirement and a report access requirement. It Should both be available in the same screen, or provide easy navigation between the input UI and the report view

**Behavioral Health Organization Management Interface.** This interface provides key functionality for care providers, including access survey results, patient management, administrative tasks, reporting, and more.

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**Intellectual Property:** Project involves a government agency so the resulting project is made available to the public. Students do not own IP. Students will be recognized as contributors