

LAIRHUB – Lab Meeting

June 21, 2024

Participants: Nibras, Shamayla, Annie, Divya, Paris, Aravind, Sunny

1. Upcoming Conference (prof. Javed)

- **JCDL (<https://2024.jcdl.org/>)**
 - Dec 16, 2024, Hong Kong
 - Deadline
 - Paper: Jul 26, 2024 (<https://2024.jcdl.org/call-for-research-papers/>)
 - Poster: Aug 3, 2024 (<https://2024.jcdl.org/call-for-posters-and-demos/>)
- **AMIA 2025 (<https://amia.org/education-events/amia-2025-informatics-summit>)**
 - Mar 10 – 13, 2025, Pittsburgh, PA, USA
 - Submission is not open yet.
- **CHI 2025(<https://chi2025.acm.org/>)**
 - Apr 26 – May 1, 2025, Yokohama, Japan
 - Deadline
 - Paper: Sep 12, 2024 (<https://chi2025.acm.org/for-authors/papers/>)
 - Doctoral Consortium: Oct 24, 2024
 - Student Competitions: Jan 23, 2025
- **NeuroIS Retreat 2025 (<https://www.neurois.org/neurois-retreat-2025/>)**
 - Not open yet

2. Project Updates

Project	Project Associate	Updates / Action Item	Resource/ Notes
DC Data / Scatter Gather	Nibras, Aravind	<ul style="list-style-type: none"> • Will request the ProQuest about getting on API. • ProQuest don't have direct API access to the humanities index. • Regarding the Humanities International Index, still haven't found how we can query this particular one using an API. ProQuest has their own API. • We have to contact to ProQuest to access API • Humanities International Index is not ProQuest, we need EBSCO API. • Aravind done to access API <ul style="list-style-type: none"> ○ Scopus-Semantic Scholar (Done) ○ Web of Science (applied approval) • Nibras done to access API <ul style="list-style-type: none"> ○ Crossref, Scopus, Web of Science ○ Web of Science approve the request, but haven't used the WoS • Javed Comments <ul style="list-style-type: none"> ○ If we know we can get a decent number of good humanities citations, we don't need to be duplicative as much. • Action Item <ul style="list-style-type: none"> ○ Get the Data ○ Nibras: Workflow 	
Information Addiction	Paris	<ul style="list-style-type: none"> • Searched information addiction or relevant topics in three of those databases <ul style="list-style-type: none"> ○ Didn't find anything too relevant • Found book- the anxious generation • Action Item <ul style="list-style-type: none"> ○ Read Editorial of Science "Unsettled Science on Social media" ○ https://www.science.org/doi/10.1126/science.adr1730#con 	
Neuro-Information Search	Divya	<ul style="list-style-type: none"> • going through a lot of papers <ul style="list-style-type: none"> ○ how eye tracking and gaze patterns can be used to help us diagnose difference types of cognitive. ○ Autism, ADHD, Down Syndrome, and general cognitive impairments that can be caused due to an injury or tremors And Dementia • Found- went through meta-analysis and scoping reviews <ul style="list-style-type: none"> ○ A lot of papers from the past 10 to 15 years ○ Autism <ul style="list-style-type: none"> ▪ Eye tracking has been used a lot to diagnosis autism ▪ Effective in early diagnosis (as young as 6 months). ▪ Children with autism focus on objects rather than social cues ▪ Use machine learning (convolutional neural networks) to analyze data 	<p>https://lairhub.com/wp-content/uploads/2023/12/2854946.2854979.pdf59.pdf</p> <p>Pattie.lairhub.com</p> <p>Louise Gallagher - Chief, Child and Youth Mental Health Collaborative</p>

- Down Syndrome
 - Eye tracking is not used for diagnosis
 - But, looking into how we can use eye tracking to help with Down syndrome.
 - three different types of Down syndrome. And slightly according to in terms of what behaviors come out for types.
 - Looking into if we can use eye tracking to understand the extent of behaviors that are related to the syndrome and how we can develop educational tools, or assess people's visual processing capabilities
- General Research
 - What kind of data is used and how is it used in diagnosing or whatever with eye tracking
 - Eye tracking data includes fixation duration, saccade patters, and movement speed
 - Visual stimuli (static images, videos) used in studies
 - Heat maps developed from data to identify trends and compare with baseline patterns
- Future Focus
 - Explore eye tracking's potential in personalized education for Down syndrome
 - Consideration of eye tracking for ADHD and dementia diagnosis
 - Evaluate the relevance of dementia and stroke studies

- **Javed Comments:**

- Figure 3 on the article (<https://lairhub.com/wp-content/uploads/2023/12/2854946.2854979.pdf59.pdf>) – eye movement, eye tracking
- Normal pattern vs few standard deviations away from normal, we can differentiate over lots of data that we can collect
- Somone with autism may have a quote-unquote, normal pattern. But their pattern is going to be different from someone without autism in the way they behave, the reading pattern
- By observing and collecting real time, these kinds of data, we can feed that into machine learning.
- Using PATTIE, when we get to the point where we have our databases up, we have web gaze or eye tracking also included in the interaction
- not just tracking what they are doing using the mouse and the keyboard on the PATTIE, we can track their eye gazes gaze and eye moments and collect that data. So we can use that data to help them navigate and find.

- **Action Item**

- Look at trauma and brain trauma for kids
- Research on understanding trauma diagnosis based on screen behavior

		<ul style="list-style-type: none"> ○ Look at comparable cognitive compromised base on trauma and its impact on behavior and interaction with system 	
Intelligent Tutoring System	Annie	<ul style="list-style-type: none"> • Done with implementing the website • Action Item <ul style="list-style-type: none"> ○ Fix some extremely minor bugs and deploy ○ will send Javed the links soon. 	
GitHub Analysis	Shamayla	<ul style="list-style-type: none"> • Javed Comments <ul style="list-style-type: none"> ○ Looked at the data, we won't be able to use that data ○ New research item <ul style="list-style-type: none"> ▪ understanding is how do we measure attention • Action Item <ul style="list-style-type: none"> ○ begin to think about "Attention economy" 	