UTKARSH DWIVEDI

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EDUCATION

PhD. in Information Studies

University of Maryland,
College Park
GPA: 3.77/4.00

Bachelor's in Design (2011 - 2015)

Indian Institute of Technology (IIT)
Guwahati
GPA: 8.15/10

SKILLS

Research and Design

Data Analysis
Data Visualization
Heuristic Evaluation
Rapid Prototyping
Usability Evaluation
User Research

Programming

Python
Pytorch
Tensorflow
Unity 3D
React.js
Node.js
MongoDB
D3.js

Design Tools

Adobe Illustrator
Adobe Photoshop

COURES OF STUDY

Graduate

Computational Linguistics
Visual learning and Recognition
Quantitative Research Methods
Educational Tech. Research
Data Visualization

Undergraduate

Design Methods
Interaction Design
Tangible User Interfaces
Physical Computing
Usability Engineering
Computer Vision
Instructional Design and Multimedia
Graphic Design

EXPERIENCE

Ph.D. Student, School of Information Studies

IAM Lab, University of Maryland
I am working on applying machine learning to accessibility use cases. Currently, I am investigating how children train machine learning classifiers, called teachable machines, and what design guidelines we can glean from their interactions.

Software Engineer and Game Designer, SplashMath (now SplashLearn)

For a year, I designed, developed and tested games for teaching math to children in grades K-5 (first 10 years of school). I worked with and lead a team of subject matter experts, game designers, game developers and game artists to make games.

Software Engineer (July' 15-now)

Mobile Enabled Industry Solutions, IBM Research India
Using AI technologies in Education and HCI for making math word problems easier to understand for students via their automatic visualizations, improving usability of eye tracking technology, combining eye tracking and affective computing for novel captcha systems. Our work with Sesame Street tackles the problem of early childhood vocabulary learning using novel machine learning algos. AR/VR tech for vocational training and teaching geography. These projects resulted in multiple patents and publications in renowned conferences.

Embedded Interactions Lab and Nokia Research (July' 14 - April' 15)

Guide: Prof. (Dr.) Keyur Sorathia, Department of Design, IIT Guwahati
Developed interactive wearable devices with connected sensors for improving mental health of dysthymic geriatric patients. Domain research on disabilities, literature review on persuasive design and cognitive behavior therapies. Resulting in an Android smart watch app, that collected ecological momentary assessment based data from an electrodermal sensor response triggered mechanism.

Machine Learning and Interactive Systems Intern (May' 14 - July' 14)

Guide: Prof. (Dr.) Anirban Dasgupta, Dept. of CSE, IIT Gandhinagar
Designed and developed a system that utilizes Latent Dirichlet Allocation, clustering techniques and crowdsourcing to make sense of environmental compliance data from government sources in order to give better recommendations to affected farmers and NGO experts hence generating awareness of the compliance conditions. The system is currently deployed, and resulted in a publication.

PUBLICATIONS

Kacorri, H., **Dwivedi, U.**, Amancherla, S., Jha M., Kamibuko, R. and Chanduka, R.
Data Sharing in Wellness, Accessibility, and Aging.
NeurIPS 2020 Workshop on Dataset Curation and Security (NeurIPS 2020)

Kacorri, H., **Dwivedi, U.**, Amancherla, S., Jha M., and Chanduka, R.
IncluSet: A Data Surfacing Repository for Accessibility Datasets.
International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '20).

Dwivedi, U., Dey, P. and Rajput, N.
Visual Math: An automated visualisation system for understanding math word problems.
International Conference on Intelligent User Interfaces (IUI) 2017. Acceptance Rate(AR): 27%.

Nayyar A., **Dwivedi, U.**, Ahuja, K., Rajput, N., Nagar, S. and Dey, K.
OptiDwell: Intelligent Adjustment of Dwell Click Time.
International Conference on Intelligent User Interfaces (IUI) 2017.

COURES OF STUDY

Undergraduate

Design Methods
Interaction Design
Tangible User Interfaces
Physical Computing
Usability Engineering
Computer Vision
Instructional Design and Multimedia
Ergonomics
Graphic Design

AWARDS AND CO-CURRICULAR

Manager's Choice Award for Putting the Client first, IBM, 2016.

Budding Technical Talent Award for contributions to cognitive technologies, IBM, 2016.

Best Project, Fresher Undergrad Competition, Computer Science, 2012.

Best B-Plan, Kriti, IIT Guwahati, 2011.

Bronze Medal, International Young Mathematicians Conference, 2011.

PUBLICATIONS

Dwivedi, U., Ahuja, K., Islam, R., Bhabhuria F., Nagar, S. and Dey, K.
EyamKayo: Interactive Gaze and Facial Expression Captcha.
International Conference on Intelligent User Interfaces (IUI) 2017.

Dwivedi, U. and Dasgupta, A.
Enabling Compliance of Environmental Conditions.
Computing for Development (ACM DEV) 2015. AR: 30%

Kumar, V., Dargan, T., **Dwivedi, U.** and Vijay, P.
Note Code: A Tangible Music Programming Puzzle Tool.
International Conf. on Tangible, Embedded and Embodied Interaction (TEI) 2015. AR: 27%.

Veit, A et al.
On optimizing human-machine task assignments.
AAAI Conference on Human Computation and Crowdsourcing (HCOMP) 2015. AR: 30%

PROJECTS

MIT Media Lab Smart Fabrics Workshop (January 2014)

Guide: Mili Tharkan (Welspun), Kshitij Marwah (MIT Media Lab)
Keywords: Arduino programming, tangible interactions
Developing tangible-electrical products using traditional zardozi (Indian metal embroidery), Field's metal and conductive threads as fabric equivalents to electric circuits. Three products were created in a week, Sound pillow (Pillow with fabric speakers), Mood Sense (An electrodermal sensor using fabric conductors), Fab-bullet (A fabric based speed sensor).

NoteCode: Computational thinking via music creation (Jan – April 2014)

Keywords: Multimedia learning, Computational thinking, Learning Sciences
Improving learning thorough use of tangible modalities, we made Note Code: a tangible music programming puzzle game to make players engage with, and learn computational thinking in the process utilising the inherent structure in music. Project involved Experiment design, Interviews, Questionnaires, Prototyping resulting in a publication.

Design Manager: Entrepreneurial Development Cell (August '13 – April '14)

Keywords: Branding, Graphic design
Managed a team of 3 designers and 3 coders, achieving the vision of making our E-cell and its flagship Entrepreneurial Summit, Udgam, the best in India, recording a doubled participation over any previous version of the summit.

Internship program in technology supported education (December 2013)

Guide: Prof. Erin Walker (Arizona State Univ.), Prof. Amy Ogan (Carnegie Mellon Univ.)
Keywords: Games for Learning, Learning Sciences, Unity programming
Using MDA framework for designing and developing a 3D game for teaching biological nomenclature and their medicinal properties to 10-13 year olds.

Ergonomics Research Intern, IIT Guwahati (May' 13 to July' 13)

Guide: Prof. (Dr.) Sougata Karmakar, Ergonomics Lab, IIT Guwahati.
Keywords: Handling Anthropometric Data, Catia V5
Using Digital Human Modelling techniques, designed a hand-held agricultural tool for harvesting wheat and rice, with improved ergonomics and task efficiency, for anthprometric requirements of Northeast India.

PATENTS

5 patents filed pertaining to Eye tracking, Virtual Reality, Affective Computing, and Educational technology: US20190080627A1, US10665119B2, US20200226941A1, US10747859B2, US20200226941A1.