

**MICHIGAN STATE**  

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**U N I V E R S I T Y**

# Beta Presentation

MSU-HFH Research Synergy Vanguard Portal (RSVP)

## The Capstone Experience

Team Henry Ford Innovations RSVP

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Fall 2024



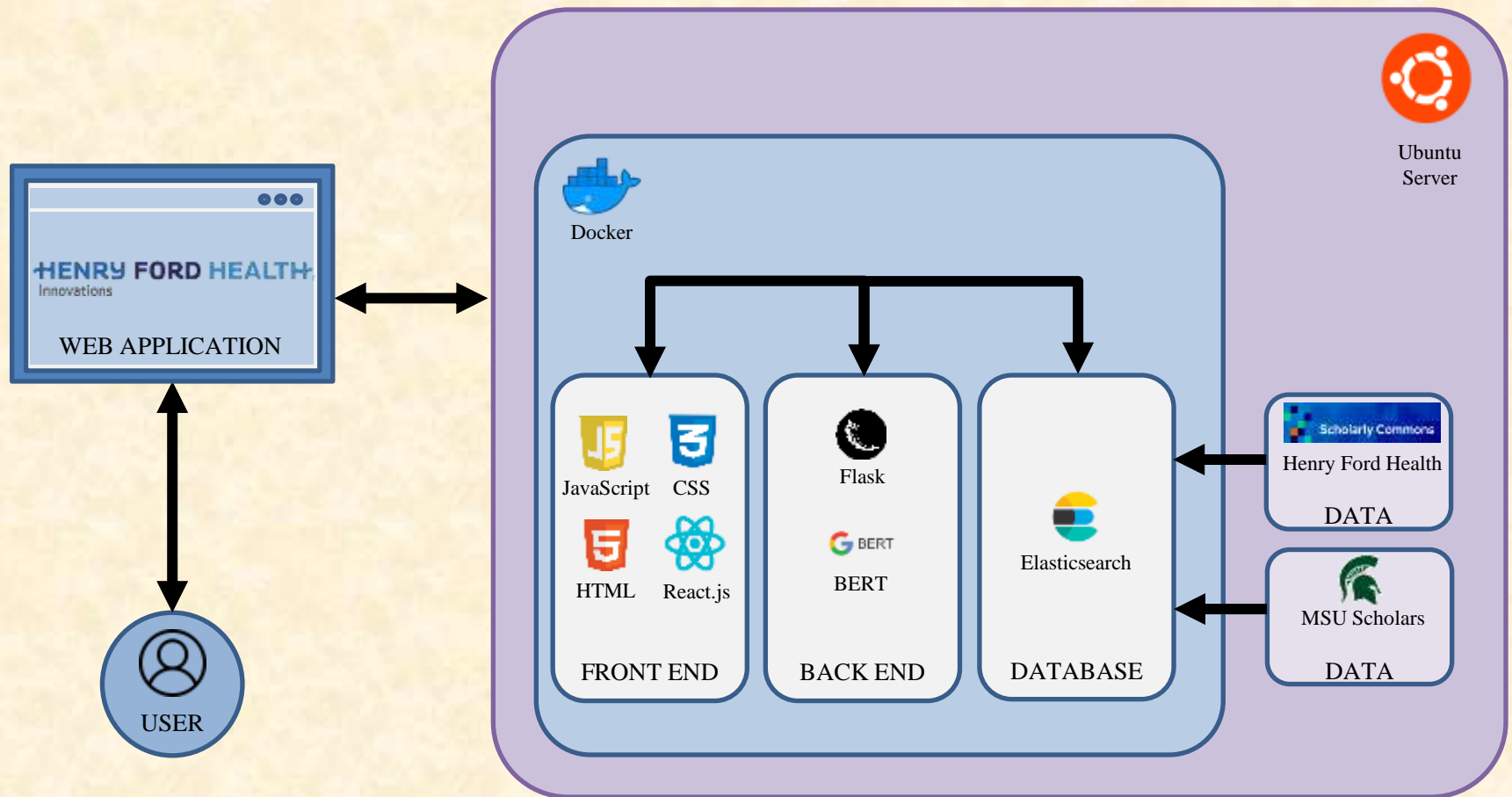
*From Students...  
...to Professionals*

# Project Overview

- Problem
  - There is a collaboration gap between professionals at MSU and HFH, hindering interdisciplinary research.
- Solution
  - RSVP streamlines the process of connecting professionals across disciplines by recommending collaborators, searching through publications, and prepopulating profiles.
- Result
  - The portal reduces time spent searching for collaborators.
  - The portal increases interdisciplinary research between the institutions.



# System Architecture



# Suggested People

The screenshot shows a web browser window with the URL `hfrsvp.com/suggested`. The page header includes the logo for Henry Ford Health + Michigan State University Health Sciences and the title "RESEARCH SYNERGY VANGUARD PORTAL". Below the header, there is a search bar with the text "Choose Seeking Query: Machine Learning and Health" and a dropdown menu. There are two radio buttons for "HFH" and "MSU", with "MSU" selected. The main content area displays three items: a profile card for Mohammad Ghassemi, a publication card, and a profile card for Sijia Liu. Each profile card includes a photo, name, affiliation, rank, score, and a "Why?" link. The publication card includes a "Back" link, title, score, and abstract.

**HENRY FORD HEALTH + MICHIGAN STATE UNIVERSITY**  
Health Sciences

**RESEARCH SYNERGY VANGUARD PORTAL**

institution, specialty, biography, research interests, and research resources to provide more tailored matches.

Choose Seeking Query: Machine Learning and Health

HFH  MSU

**Mohammad Ghassemi**  
MSU  
Assistant Professor  
Computer Science and Engineering (CSE), College of Engineering  
Rank: 1 (Score: 100.00%)  
Why?  
Remove

**Publications:** Back

**Modeling disease progression via multi-task learning**  
Publication Score: 74.17%

Abstract: Alzheimer's disease (AD), the most common type of dementia, is a severe neurodegenerative disorder. Identifying biomarkers that can track the progress of the disease has recently received increasing attentions in AD research. An accurate prediction of disease progression would facilitate optimal decision-making for clinicians and patients. A definitive diagnosis of AD requires autopsy confirmation, thus many clinical/cognitive measures including Mini Mental State Examination (MMSE) and Alzheimer's Disease Assessment Scale cognitive subscale (ADAS-Cog) have been designed to evaluate the cognitive status of the patients and used as important criteria for clinical diagnosis of probable AD. In this paper, we consider the problem of predicting disease progression measured by the cognitive scores and selecting biomarkers predictive of the progression. Specifically, we formulate the prediction problem as a multi-

**Sijia Liu**  
MSU  
Assistant Professor  
Computer Science and Engineering (CSE), College of Engineering  
Rank: 3 (Score: 75.86%)  
Why?  
Bookmark



# Semantic Search (Papers)

The screenshot displays a web browser window with the URL `hfrsvp.com/search`. The page header includes the logo for Henry Ford Health + Michigan State University Health Sciences and the text "RESEARCH SYNERGY VANGUARD PORTAL". A user profile picture is visible in the top right corner.

The main heading is "SEMANTIC SEARCH". Below it is a search bar containing the text "AI and Health" and a magnifying glass icon. Underneath the search bar is a toggle switch for "Papers" (which is selected) and "Users".

The "Results" section shows three filters: "All" (checked), "MSU" (checked), and "HFH" (checked). The first result is titled "Machine learning and decision support in critical care" and is dated ". 2016". The author is listed as "Mohammad Ghassemi, MSU". The abstract text reads: "Clinical data management systems typically provide caregiver teams with useful information, derived from large, sometimes highly heterogeneous, data sources that are often changing dynamically. Over the last decade there has been a significant surge in interest in using these data sources, from simply re-using the standard clinical databases for event prediction or decision support, to including dynamic and patient-specific information into clinical monitoring and prediction problems. However, in most cases, commercial clinical databases have been designed to document clinical activity for reporting, liability and billing reasons, rather than for developing new algorithms. With increasing excitement surrounding "secondary use of medical records" and "Big Data" analytics, it is important to understand the limitations of current databases and what needs to change in order to enter an era of "precision medicine." This ...". The citation count is "71,42%". A small profile picture of the author is shown to the right of the result.

The second result is titled "Optimal medication dosing from suboptimal clinical examples: A deep reinforcement learning approach" and is also dated ". 2016". The author is "Mohammad Ghassemi, MSU". A small profile picture of the author is shown to the right of the result.



# Semantic Search (Users)

The screenshot shows a web browser window with the URL `hfhsvp.com/search`. The page header includes the logo for Henry Ford Health + Michigan State University Health Sciences and the text "RESEARCH SYNERGY VANGUARD PORTAL". A user profile picture is visible in the top right corner. The main heading is "SEMANTIC SEARCH". Below this is a search input field containing the text "moore" and a search icon. A toggle switch is set to "Users", with "Papers" also visible. Underneath, the word "Results" is displayed, followed by filter buttons for "All", "MSU", and "HFH". Two search results are shown as cards. The first card is titled "Moore, Daniel, HFH" and features a portrait of a man in a white lab coat. The second card is titled "Moore, David A., HFH" and features a portrait of a man with a beard in a white lab coat.



# Profile Connections

The screenshot shows a web browser window displaying a profile page on the 'RESEARCH SYNERGY VANGUARD PORTAL'. The page header includes the logo for 'HENRY FORD HEALTH + MICHIGAN STATE UNIVERSITY Health Sciences' and the portal name. A user profile picture is visible in the top right corner. The main profile section features a large photo of a woman, 'Jayaprakash, Namita, HFH', with an 'Edit' button below it. Her title is 'Emergency Staff' and her specialties are 'Critical Care Medicine, Emergency Medicine'. The 'Biography' section includes an 'Edit Biography' button and text about her areas of interest: 'Delivery of early interventions in critical illness, optimizing the delivery of critical care in the emergency department, medical education'. Below this are three sections of questions with their respective answers: 'What are your primary research interests or areas of expertise?' (Patient evaluation, Care ultrasound, Lower workload sequential, Ultrasound pocus increase, Space administration), 'What datasets, tools, methodologies, or technologies do you typically use?' (Blood samples, Spearman correlation and analysis of variance, Diagnosis and additional management strategies, Univariate tests for mean and median distribution), and 'What specific expertise are you seeking?' (Machine Learning and Health). Each section has an 'Edit' button.

RSVP

hfrsvp.com/profile

HENRY FORD HEALTH + MICHIGAN STATE UNIVERSITY Health Sciences

RESEARCH SYNERGY VANGUARD PORTAL

Jayaprakash, Namita, HFH

Edit

Emergency Staff  
Critical Care Medicine, Emergency Medicine

**Biography:**  
Areas of interest: Delivery of early interventions in critical illness, optimizing the delivery of critical care in the emergency department, medical education

Edit Biography

**What are your primary research interests or areas of expertise?**  
Patient evaluation, Care ultrasound, Lower workload sequential, Ultrasound pocus increase, Space administration

**What datasets, tools, methodologies, or technologies do you typically use?**  
Blood samples, Spearman correlation and analysis of variance, Diagnosis and additional management strategies, Univariate tests for mean and median distribution

**What specific expertise are you seeking?**  
Machine Learning and Health

Edit Questions

OVERVIEW

RESEARCH PAPERS

CONTACT



# What's left to do?

- Stretch Goals
  - Multiple Sets of Recommendations
  - Bookmark feature
  - Dashboard feature
  - Edit publications
  - Summarize publications
- Other Tasks
  - Fix bugs
  - Document code





# Questions?

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