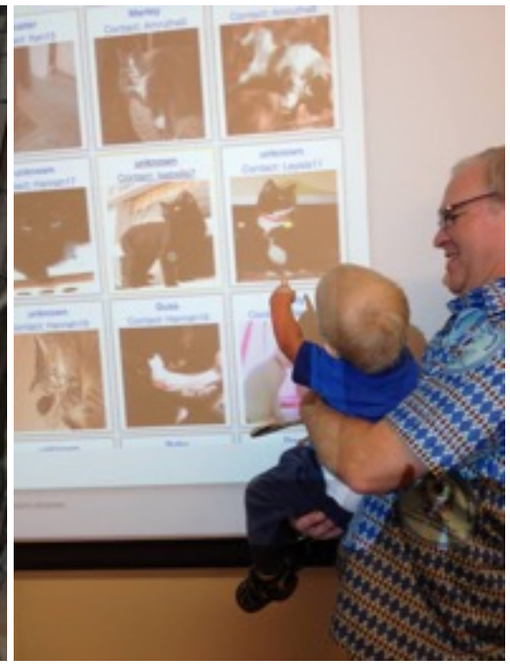
Engineering Crowdwork for Disaster Events: The Human-centered Development of a Lost-and-Found Tasking Environment



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The University of Colorado Boulder

Outline

Crisis Informatics Background

Nature of Crowdwork

The EmergencyPetMatcher System

Implications for Software Engineering in Disaster Events

Crisis Informatics

Seeks to understand how disaster-abetted behaviors of emergency management and members of the public inform the design and use of systems during such events

Crowdwork

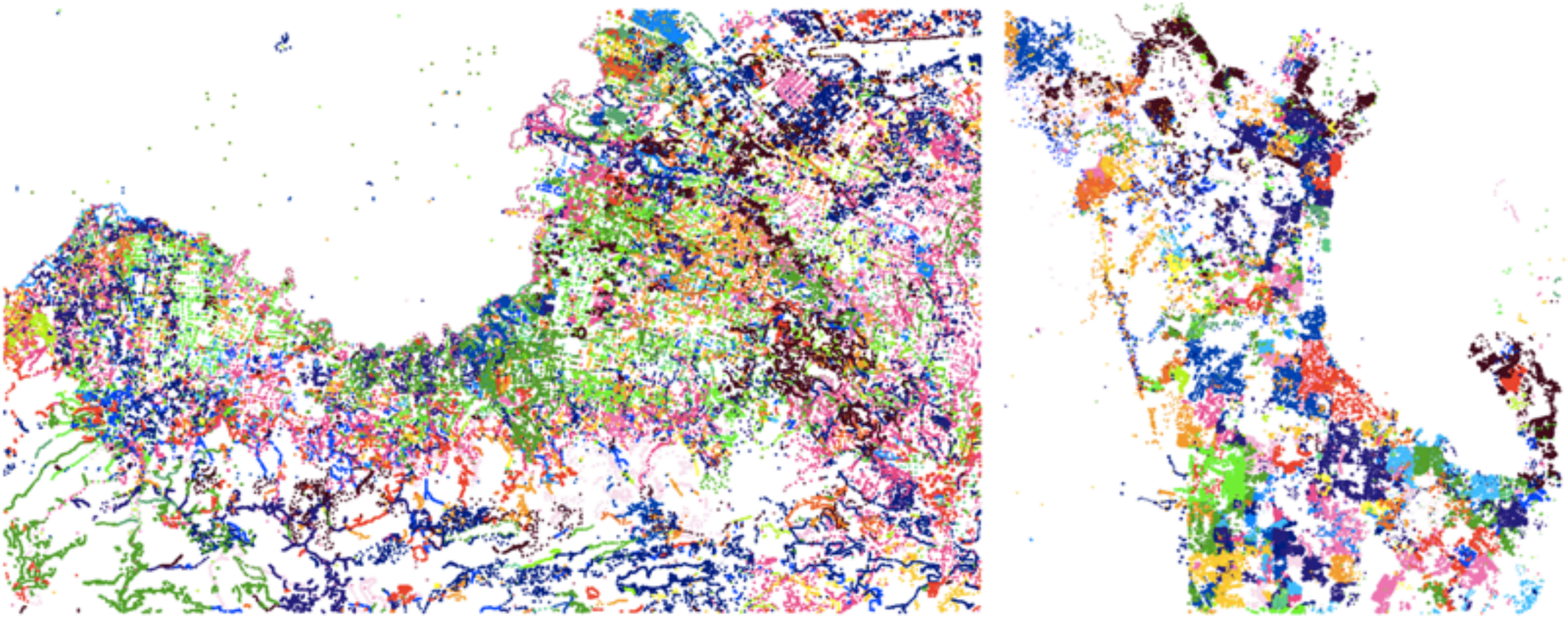


Photo Sources: Jennings Anderson (Project EPIC)

Crowdwork Challenges

Misinformation and Disinformation

Accuracy

Menial vs. Meaningful

Ethics

Liability

Photo Sources: UN Photo-Logan Abassi and Damon Winter for the New York Times

Pet Displacement in Disasters

Photo Sources: Krill Oil Animal Cruelty Overview (http://krilloil.com/blog/cruelty-poison-control-disaster-preparedness-pet-care/)

Pet Advocacy through Digital Volunteerism

PEOPLE

33,321 likes

Amrutha Rajiv and **Joanne White** like this.

Invite your friends to like this Page

ABOUT

Posting photos of lost or found pets in the areas affected by Sandy, as well as posting animal shelters in need and temporary shelters that allow animals. ...

Post | Photo / Video

Write something on this Page...

Hurricane Sandy Lost and Found Pets
1 hr ·

1000 Days at an Overcrowded Shelter and Not One Inquiry on Sweet Sophie

This beautiful girl is Sophie, she is full of life and has so much love to give. She arrived by way of Animal Control Officer as a stray and no one came to bring her home. Sophie is not a fan of other dogs so prefers to be an only child and get all the love for herself!

Please don't Let her Waste Away Any Longer at a Shelter!... See More

EPM Design

Personas

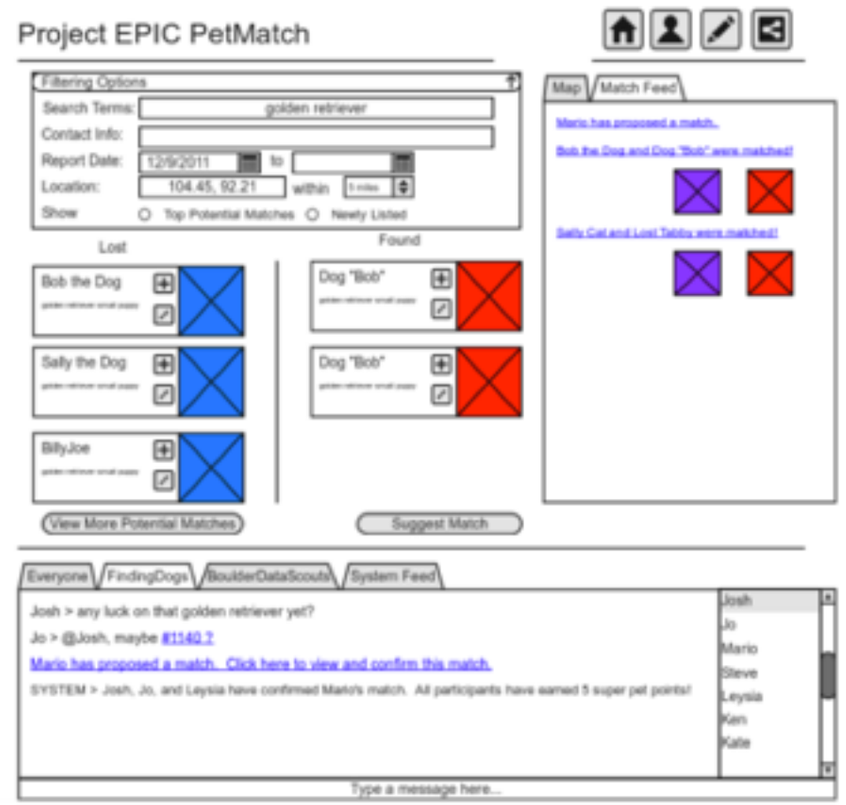
Data Scout, Matcher, Checker

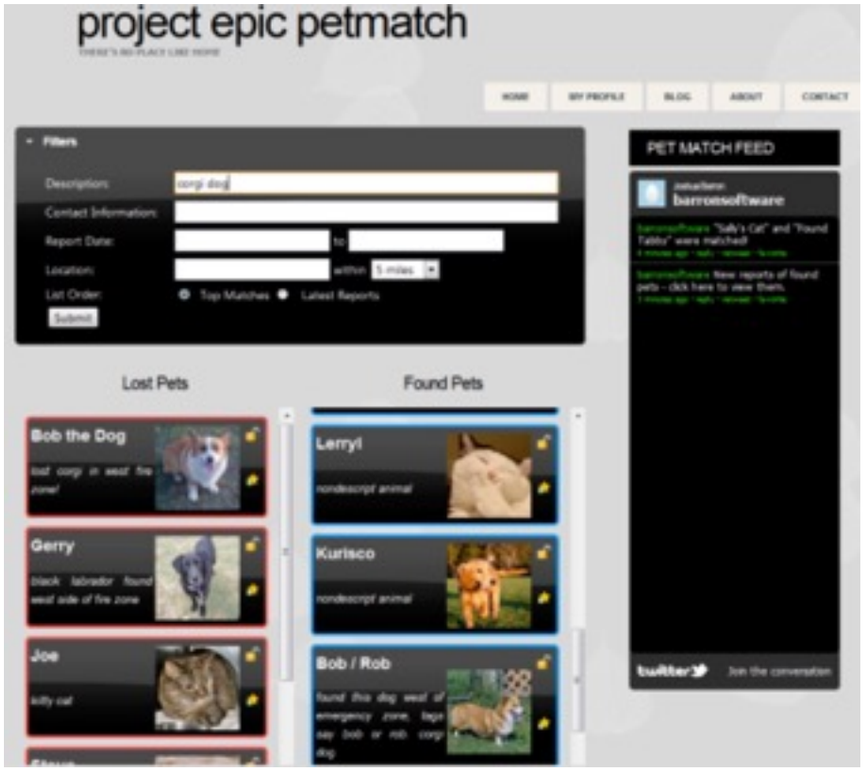
Cognitive Walkthroughs

Suggest a Match for “Bob” the dog.

Think-Aloud Protocol Runs

8 participants (ages 16-71)





EPM Development

Agile methodology

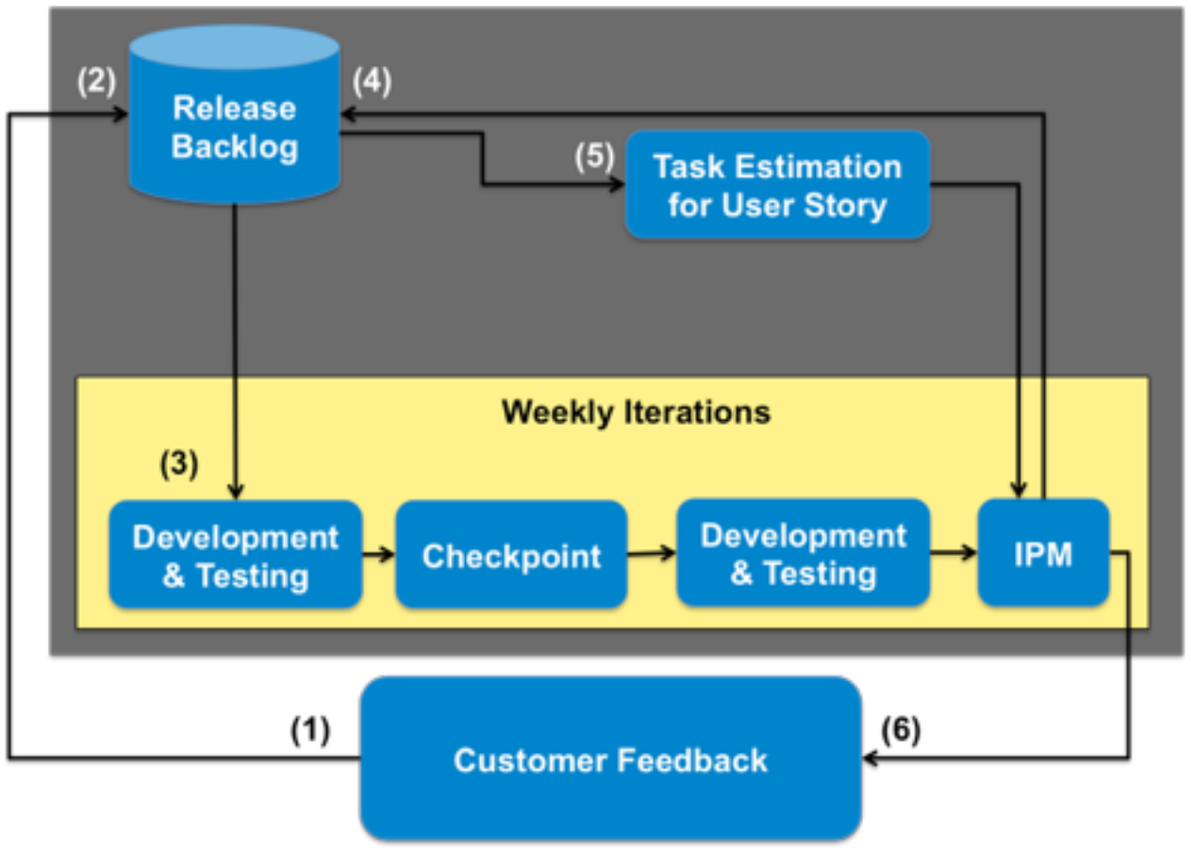
“Customers” were end-users in the research team

360-based Developer Reviews

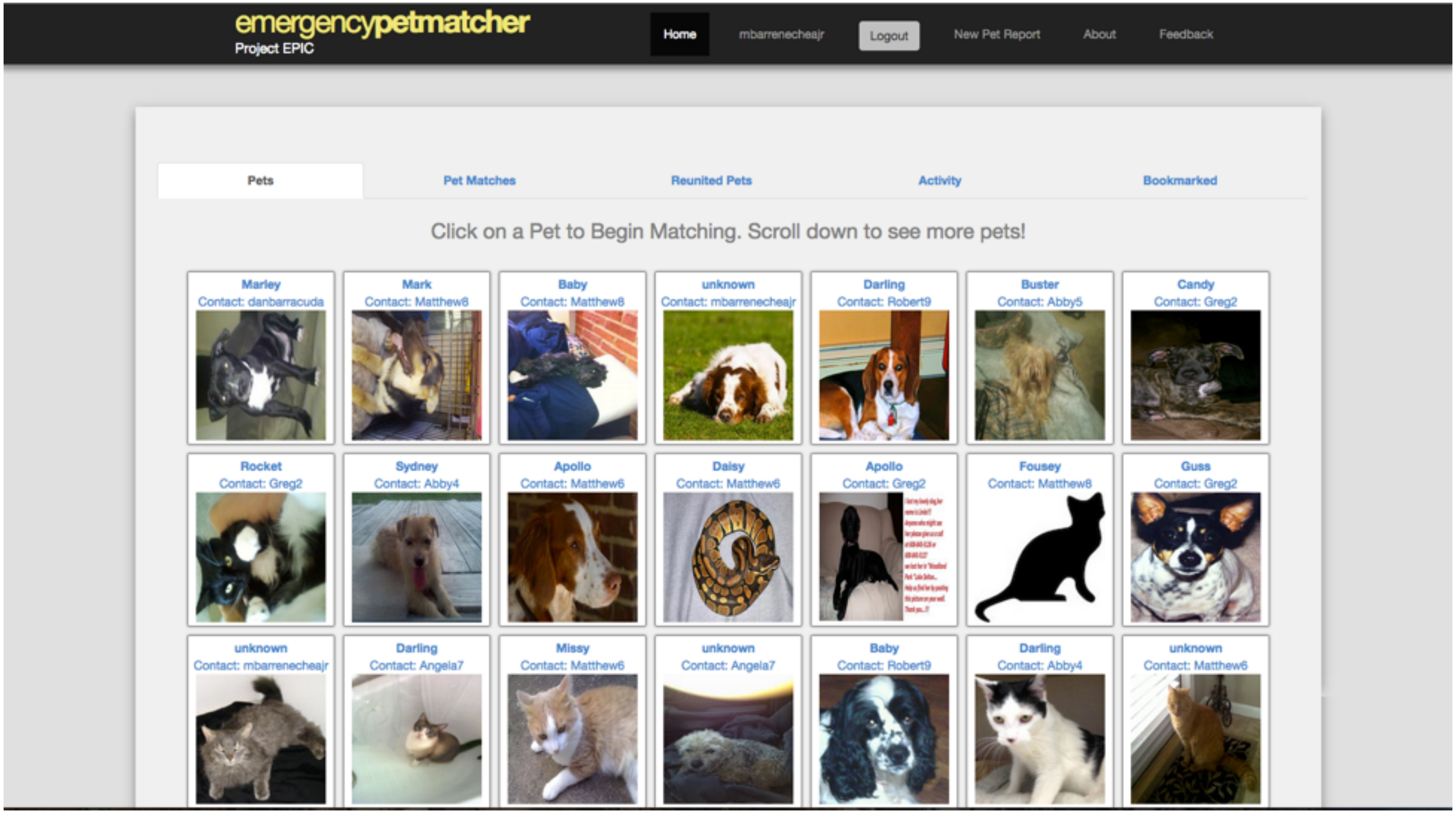
Scalable Development and Deployment Technologies

Python/Django

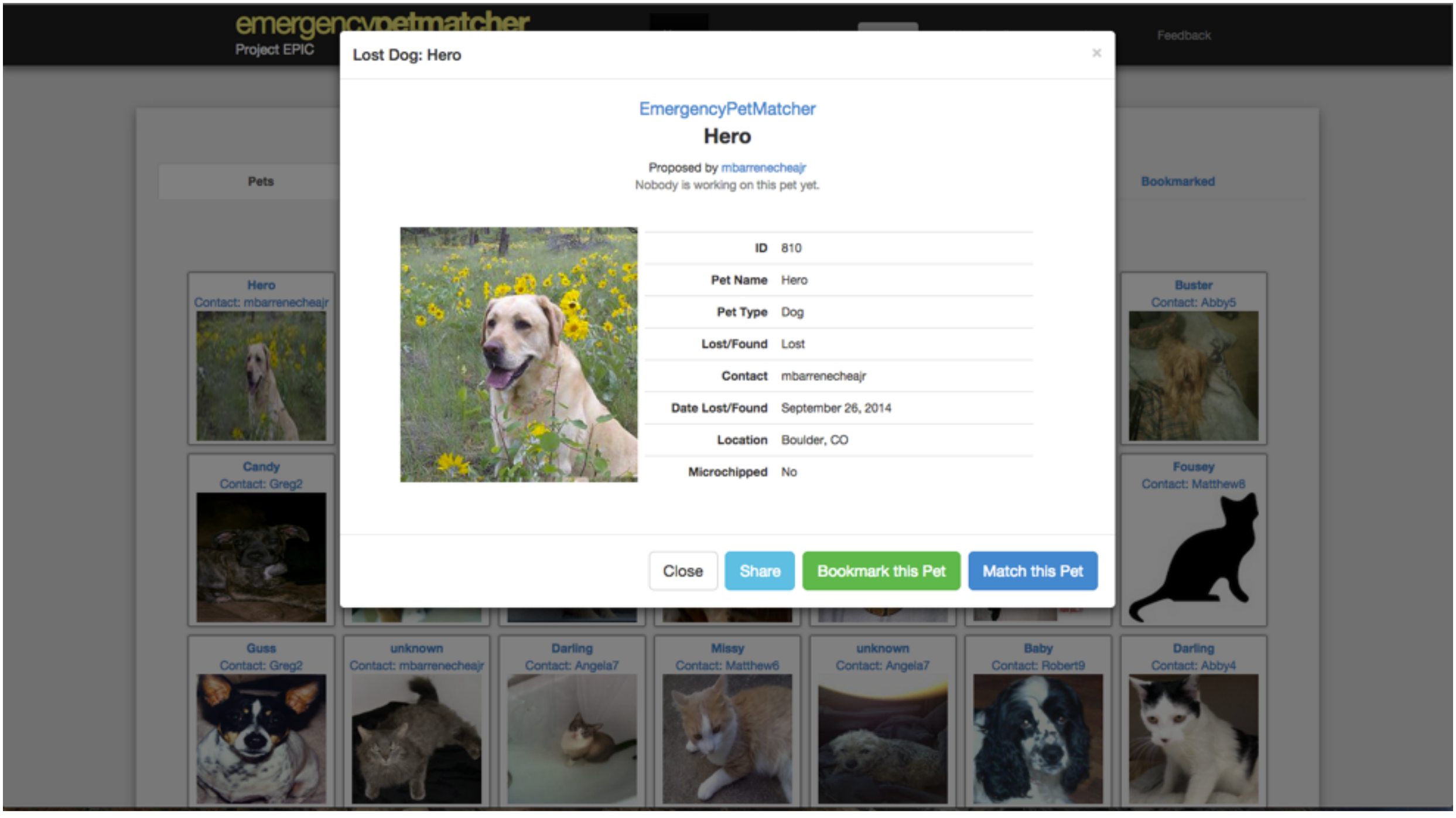
Vagrant/Puppet



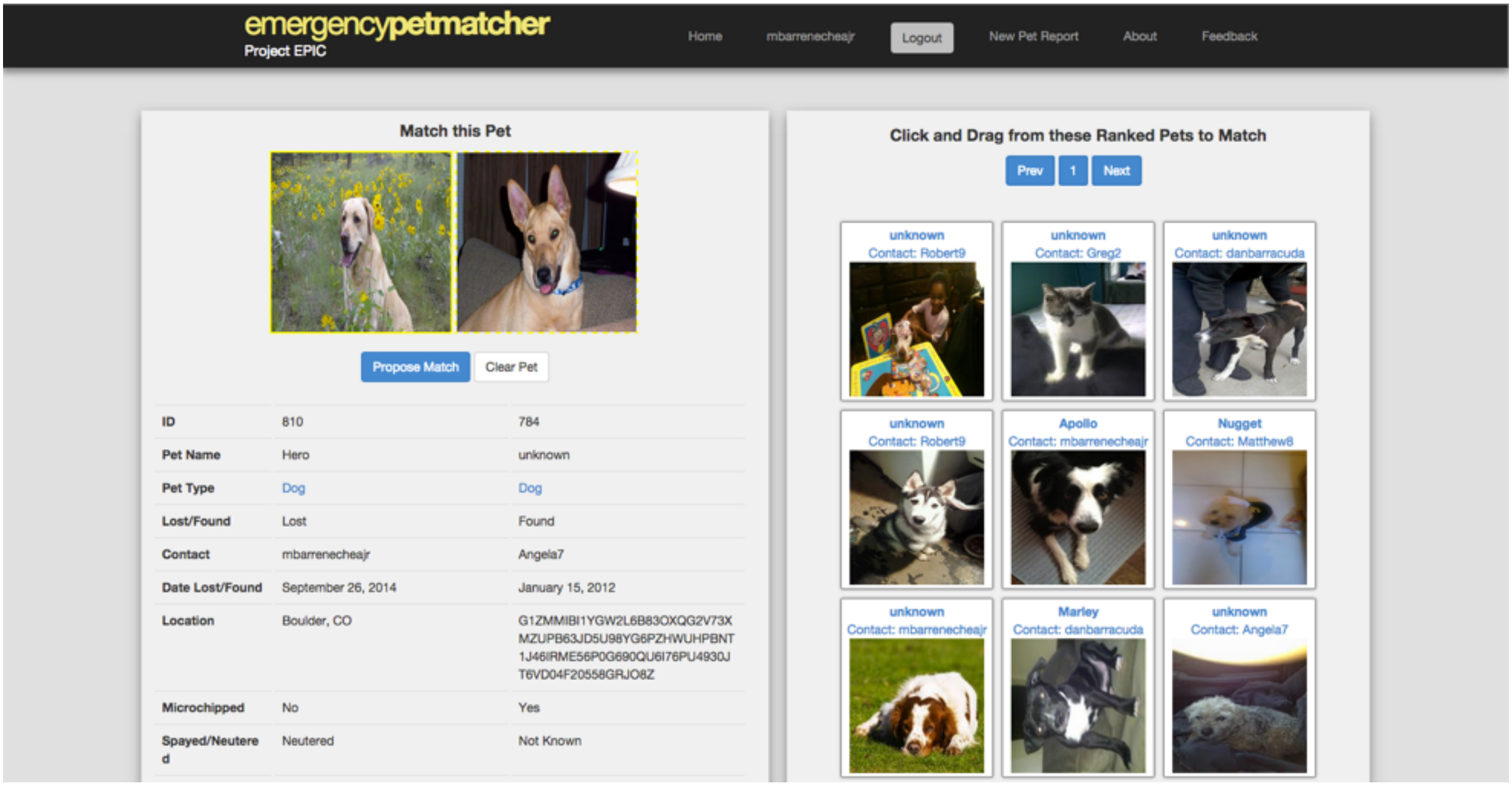
EPM Home Page



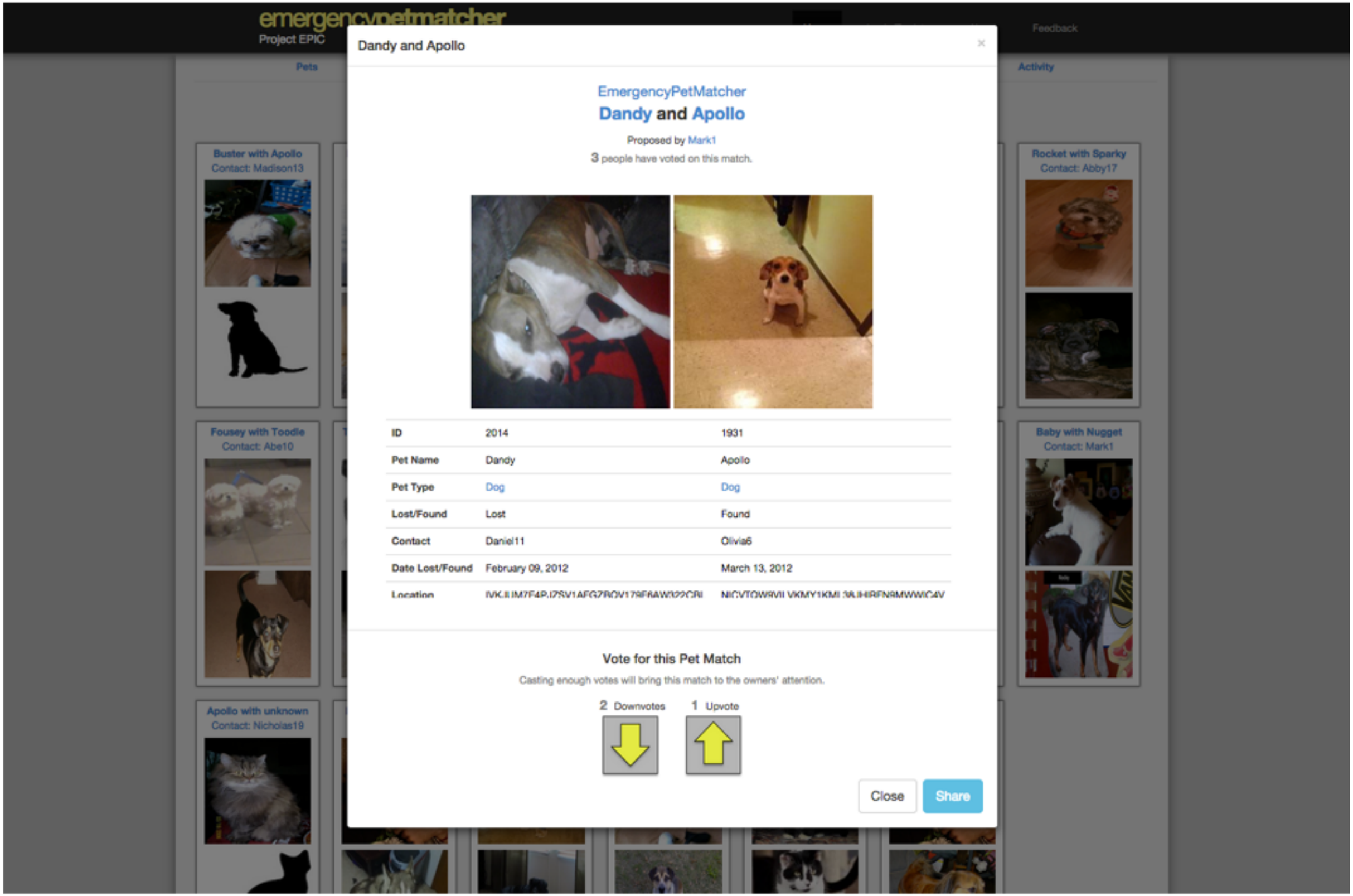
EPM Pet Report



EPM Pet Matching



EPM Pet Match



Software Engineering for Disaster ICT

Usability - Design with users and types of users in mind

Adaptability - Feedback loops and fast iteration

Reliability - Keep system up at all costs

Thank you

Ken Anderson
Leysia Palen
Joanne White
Mazin Hakeem
Sahar Jambi
Amrutha Rajiv
Lise St. Denis
and rest of **Project EPIC**
CUBoulder
NSF