CounterAttack

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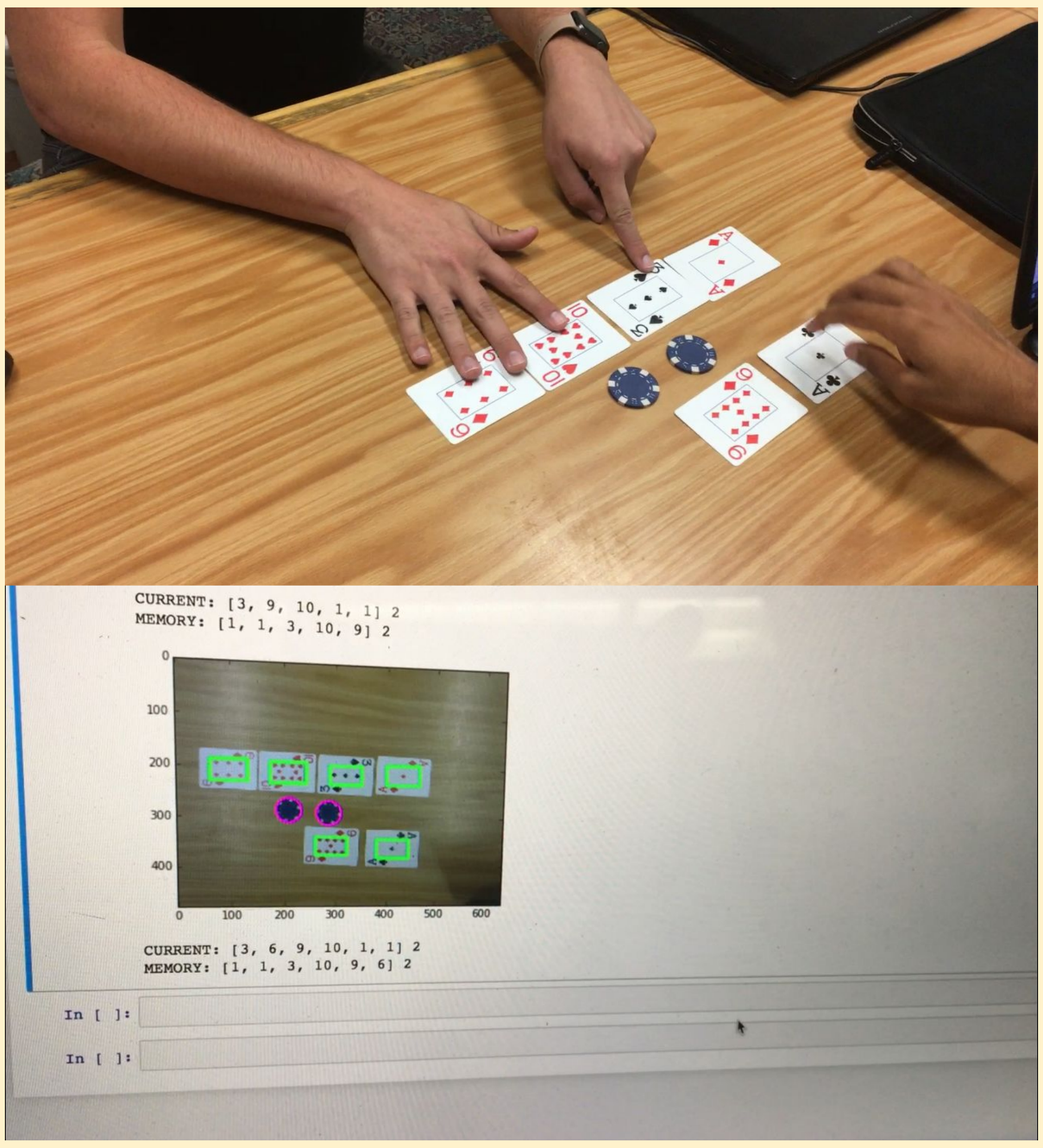
Goal

The main purpose of this system is to automatically monitor multiple simultaneous games of blackjack in multiple geographic locations to detect potential card counters, who might erase or negate any potential profits for the casino hosting the game. Our cloud-based solution carries out this process by using existing camera infrastructure and distributed object recognition algorithms to detect chips and cards on the playing table. Once this data is captured, our algorithms calculate the correlation between the player's bets and the remaining cards in the deck to calculate the likelihood that the player is counting cards with the intent of removing or reversing the house's advantage in the game.

Background

Advantage play is defined as the act of legally exploiting procedural or structural weaknesses in some aspect of casino games or operations in a way that generates an edge over the casino. One type of advantage play is "card counting". Although it is not considered to be illegal, casinos exercise countermeasures to prevent any sort of advantage play. While casino security is an extremely secretive subject, through our research we have not found any record of systems similar to ours being used by the industry. Currently, the only overhead cameras in use are monitored manually by humans, not (to our knowledge) algorithmically analyzed in a fully-automated fashion and stored in persistent databases.

Early Development



Team Members

Brandt Bucher (Team Leader)

Brandt coordinates tasks within the project, writes documentation, tests, front-end libraries, and back-end server code, and implements general functionality developed by the other members.

Rudy Aquino

Rudy has been researching and developing algorithms to aid in fast, accurate, robust card detection, as well as as developing algorithms to detect and quantify stacks of chips.

Syed Omer Azeemuddin

Syed has been primarily researching and developing different approaches towards detecting and isolating stacks of chips.

Try out our free client-side Python API access library!

https://www.GitHub.com/BrandtBucher/CounterAttack-API

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