# University of Central Florida

# Department of Computer Science

# CDA 5106: Fall 2023

# Machine Problem 2: Branch Prediction
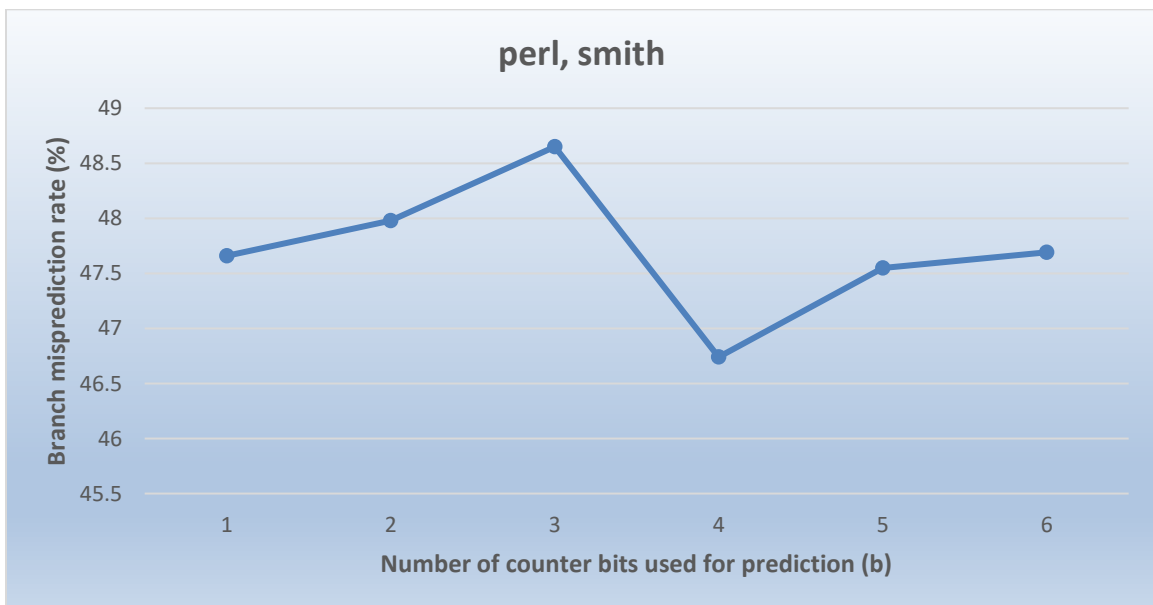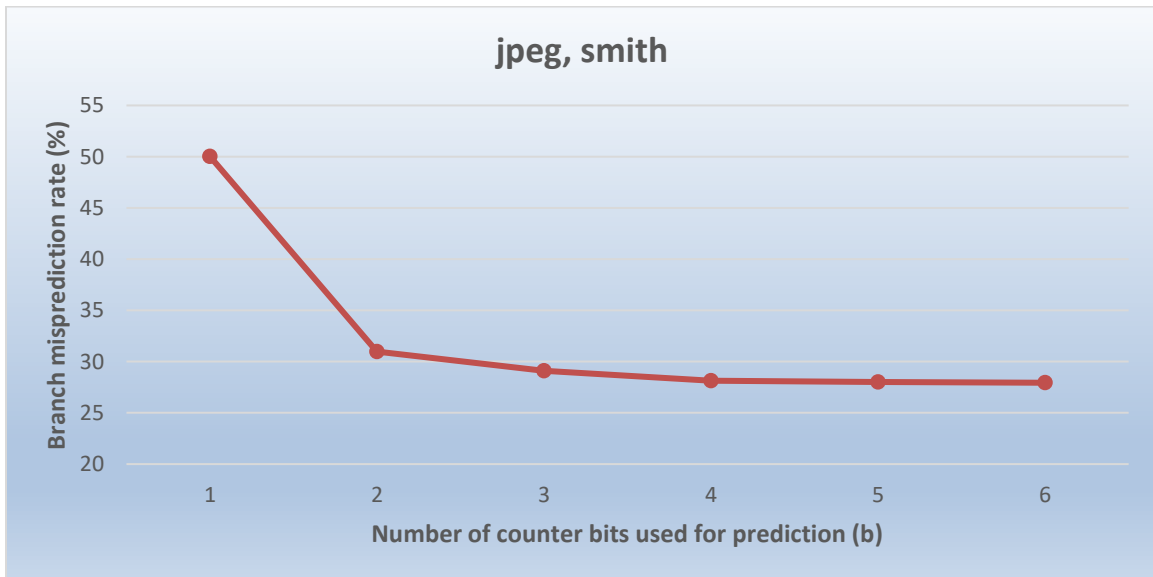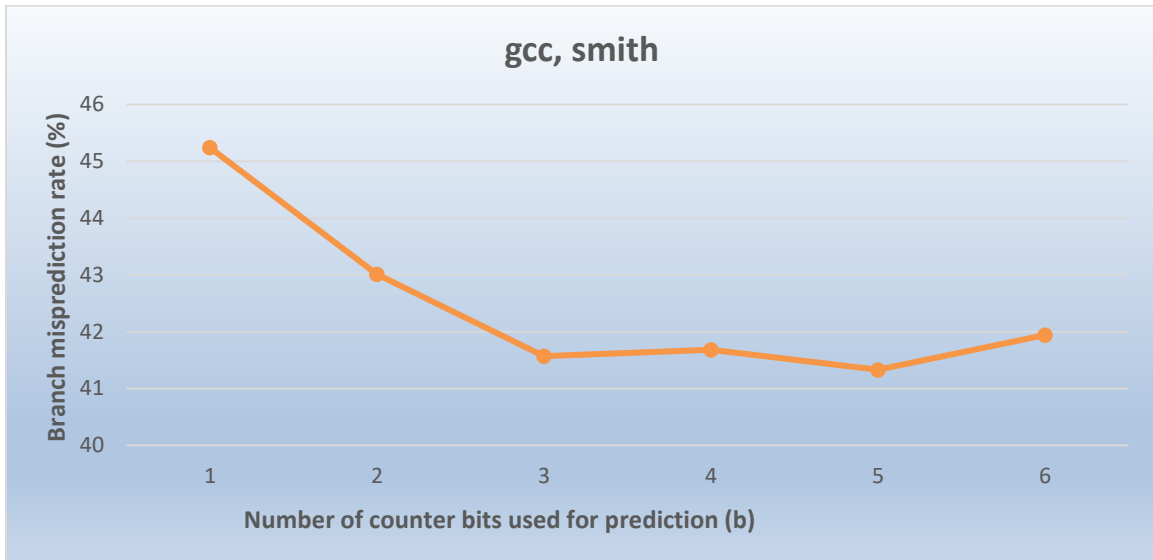
# by

# Tanmay Arora

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# PART 1: GRAPHS FOR SMITH N-BIT COUNTER PREDICTOR



gcc, smith



jpeg, smith



perl, smith

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# PART 2: GRAPHS FOR BIMODAL PREDICTOR



## gcc, bimodal

Branch misprediction rate (%) vs Number of PC bits used (m)

## jpeg, bimodal

Branch misprediction rate (%) vs Number of PC bits used (m)

## perl, bimodal

Branch misprediction rate (%) vs Number of PC bits used (m)

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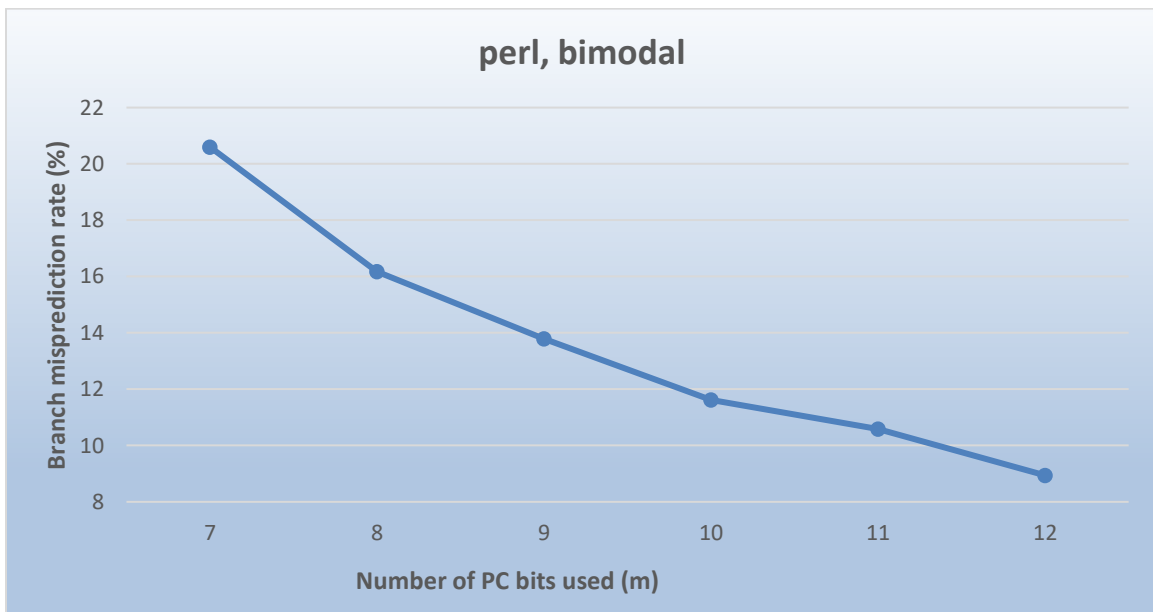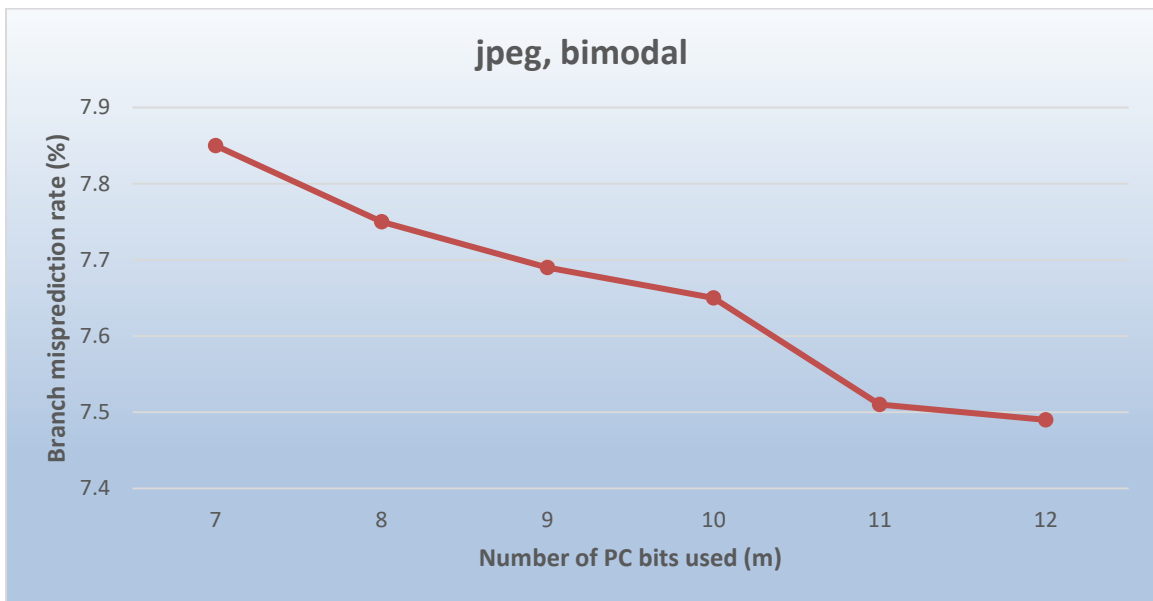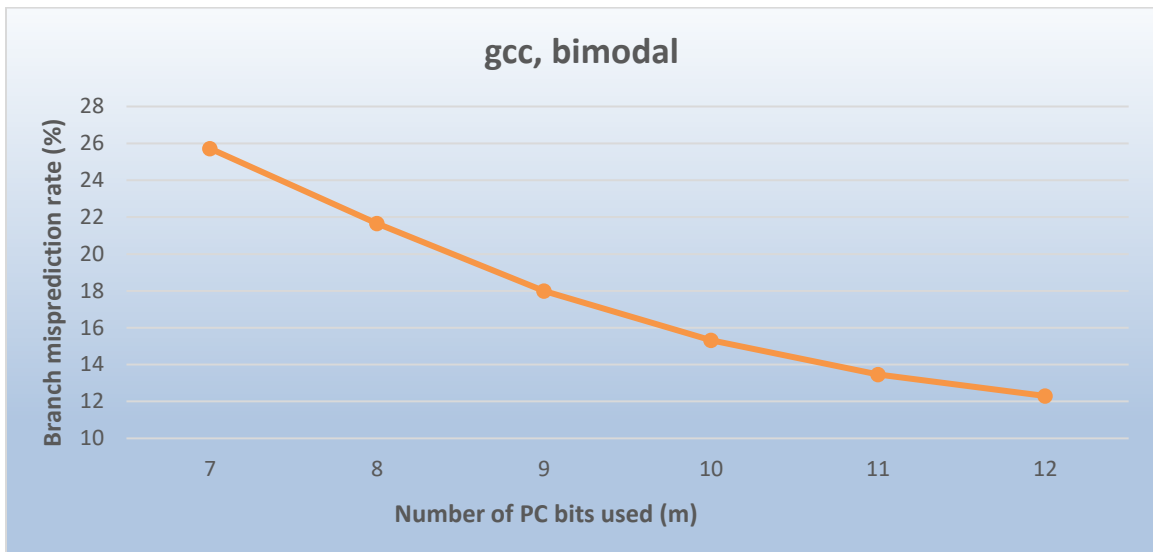
**PART 3: GRAPHS FOR GSHARE PREDICTOR**



gcc, gshare



jpeg, gshare

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perl, gshare