Words for 3-D Vision

Nie Shicong

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Linear Algebra Done Right

audacious torturous banish make up for ... in a fasion genuine / formal , due to the next class

without charge I'm no longer around first brush immerse yourself in ... an emphasize on attaining \dots zip through a page on your part ponder internalize without regard to ... owe a debt heritage antiquity Bestowing proper credit on ... undertake In no case should \dots dispense with clutter vague as rigorously defined as philosphy lurk proposition corollary once and for all be enlarged with triplet transport parallelepiped Roughly speaking, ... anticipate derive / derivation refer to …as … $\,$ instantaneous / spontaneous be doomed to ...

1 Chapter 2 & Chapter 3

rudiment / rudimentary In a broad figurative sense frescoe mosaic landscape It's no coincidence proficient matter vibrant compelling rather sophisticated indicative portray graph irradiance by no means trivial diffraction / refraction / reflection germane we can argue with emit cone negligible undeflected upside down subtend radiance flux consist in \dots compensate ...outlined above ...thus obtained articulate / articulation aberration counterpart

2 Chapter 4

reconcile at the outset moreover discern / discernible presumably photom discrepancy corrupt manifestation counteract envision opaque suggestive cardinality count on \dots conceive rephrase lend itself to \dots lump departure scatter ambient translucentanisotropic commonplace hint How do we proceed? ill / well posed an abuse of notation tilde / wiggle identical more diagonally moderate nonuniform , irrespective of \dots \dots made of \dots

```
regard ...as ...
decent
curvature
marble
distinctive
elucidate
extended
qualitative / quantitative
diffuse
warp
{\it substantial}
prune (out)
pyramid
jerk
whilst
shearing
field
even if
chameleon
specularity / specular
among other things
mega
heuristic / heuristics
discriminate / discriminative
mannequin
dummy
doable
stroboscope
agenda
alternate among / between
side benefit / effect
```

MVG Lecture 8, 9, 10

fascinating pursue

schematic
involved
suboptimal
haunt
recipe
reasoning
inference
pathological
chances are that ...
reminiscent of ...
...mingled with ...
derive / derived / derivation
bombastic

3 Chapter 5

unveil photogrammetry Without loss of generality / continuity characterization sufficiency / necessity draw attention to the case that ... three out of the four ... parallax exercise caution to ... be of more significance for ... bury uncontroversial universally accepted probable / improbable When combined with, ... In what follows, ... oversight In the remainder of ... multimodal optimality

4 Chapter 8

```
panoramic / panorama
at most
taxonomy
gross errors
pertain to
the saurus
suspicion
be promoted by ...
quadrilinear
annihilate
quadruple
clarify / clarity / for clarity
rectilinear
glimpse
purturb
synthesis
concave
crank up
isoline
asymptotic
be inferior to
zig-zag
contract
paraboloid
provided (that)
in this regime
revert to
profit from
extremality / extremity
quasi
damp
overlook
be (all) set to go
```

silhouette contour a whole lot monocular footage circumvent

5 Direct approaches for Visual SLAM

invariably
devastate
deteriorate
degrade
nuisance
sideways
close by
soap films
in-between
revision
residuum / residual
voxel
more or less
alleviate

6 Chapter 11

multifaceted irregular polygonal so as to ... convolve forcibly suppress tile

```
disparate
elaborate
contrast
sawtooth
aliasing
sinusoidal / sinusoid
convey
{\it transmission}
adequate
waveform
ego-motion / ego / egoistic /egoistical
primitive
\\ multiscale
superpose
be similar in spirit to ...
compromise \\
macroscopic
rationale
caveat
radically
forego
laden
be reputed to ...
putative
orphan
underlying
be free of \dots
handful of \dots
render sth. be
settle for sth.
set up
two orders of magnitude
uneven
play with ...
in place of \dots
extrapolate
convex hull
carve
```

tetrahedra prism arch surfaces of revolution bookkeeping entail

7 Review

long known indispensable rational / rational number quotient

8 Introduction to Linear Algebra

all-important / vitally important / crucial hammer away at the difference between \dots and \dots ...back off from ... seesaw / teeterboard spreadsheet This is more than ... at once / at the same time stand for \dots either way humble fall into place The odds are ... basic facts regard ...as ... common sense magician sweep provision

9 Toefl Listening

folk / fairy tale act out narrate props scenery be disillusioned with be grappling with symbolize seemingly unsolvable turmoil bare ...be a departure from ... make us see be swept up I'd love / like to ... \dots be the same \dots as \dots the significance difference is with ... costume... be teemingly with \dots organism \dots get as much popular attention as \dots whale microscopic algae ...aren't as exciting bulk, bulk of ... plankton fresh water mystery not the way birds do

```
must
commute / commuting
stimulus / stimuli
sun's rays
barely
penetrate
away from
sunlight
head back toward ...
illuminate
expend
predator / predator avoidance
Make sense, doesn't it?
But what do we do with ...?
at great depth
light up
bioluminescent
despite all these
by sight
presence and absence
prey / prey on
ultra-violet
conserve
feeding
digest
archaeology
go out into the field
shovel
an array of
inter-disciplinary / multi-disciplinary
muon
...result from ...
subatomic
start over
basically
proton
zip through
outer space
```

be critical for ... be closely based on ... occasionally hardly ever ...anymore originally controversial filmmaker purity over time orchestra if wannted drum, rolling of drums ...or whatever But that wasn't as common ..., the ones concerned about Trouble is(was), ... the luster wears off commerce was it ever? the commercial types now that ... visual medium stage straight adaptations from ... since ... all they pretty much did was ... on the mark nonsynchronous expressive have experience with ... live radio technician ...that makes sense to them less obvious Anyway, ... look at this in various ways radical advocate

a bit of an exaggeration What meant to say was ... making money proliferate / proliferation

10 Miscellaneous

striving / strive grand goals core mission non-profit fuel ... openly sponsor editorial publications across the world workshop panel / panelist webinar mailing-list newsletter disseminate more collaborative / inclusive have sb. on-board curate advisory board enthusiast at scale alchemist predictive maintenance schedule a meeting / call quota coffee break poster interface a new problem with ... peer, peer review, peer pressure be articulated in two phases announce / announcement adherence to .../ adherent final aggregation score ever more exclusively focus on ... memory overhead take / draw inspiration from ... disentangle a surge of mediate, be mediated by ... neurocognitive sensorimotor remain a long-standing challenge forfactor in ... curriculum progressively / progressive over long time spans interfere with ... abrupt / abruptly excel = be master of ... / excel at ...a batch of pragmatic pragmatically hinder methodology developmental in scenarios of ... timely refine / refinement on the basis of ... mammal / mammalian throughout the lifespan contingency sustainable / sustainability sustained = continuousneurophysiological / neurophysiology visiting student eligible

```
democratic / democracy
...be made possible with / by ...
consultant
lineup
given
on a daily basis / on a regular basis
cutting edge
underway
initiative
hub of infomation
didactic
avalanche
with ...in mind
value ...
showcasing
venue
cause
bibliography / bibliographic
hiccup
antithetical
antipodal
utterly
nerve ...
bombard / be bombarded with \dots
arrange = lay out
as originally conceived
living creatures
be adept with ...
repurpose
in some ad hoc way
dispute
in any case
self-imposed
submarine
harness the power
towards its own purposes
steer
accrue
```

brilliant, a brilliant idea metaphor corollary teleoperation rebel / rebellion be constantly chaning / evolving regularity a rough idea string transpire unfold at its own pace prose sensible unorthodox peg, pegged to ... entrustprobe waterfall definitive cascade tailor, be tailored to ... diploma cohort, a diverse cohort of ... attest / attested defer transcriptcomparable proficiency / proficient postsecondary ivy a huge time commitment rigorous embarkaccredit / accredited phenomenal in no way disrupt / disruption

```
breadth
demonstrated leadership
deposit
flush
await / be awaiting
turtle / tortoise
carnivorous / herbivores
imperative
pervasive
scavenge / scavenger
refrain from \dots
scarity of ...
sensitization
habituation
exposure
a well lit room
reciprocal
retreat into ...
secrete
ion
astounding
finer
acuity
causal / casual
differentiate
conditioning
be made famous by \dots
saliva / salivate
..., as such in the example of ...
cattle
deter ...from ...
in the wild
uncover
inhibit / inhibition
octopus
jar
crab
...trapped inside
```

```
hint at ...
...be paired with ...
fade away / out
renewed
embrace
malleability
regulate
compensatory
homeostatic
hippocampus
{\rm neocortex}
human subject research
the vast majority of ...
modality-specific
ecological
multisensory
embody
in one's infancy / infant
stepping stone
ad-hoc
astonishing
assimilate
rehabilitate / rehabilitation center
modulate
overarching
predominant / prominent
profile
grant
seminal work / seminal fluid
ocular
newborn
kitten
deprivation
...be characterized by ...
...with the aim to ...
comprise
replicate / replica / replicant
neuroscience
```

```
finding
preferential
transient
amend
be contingent on ...
should / if
usher
interleaved
in favor of ...
graceful
richness
long-standing
mitigate / alleviate
...
to make sense of \dots
be immersed in ...
spatio-temporal
make massive use of ...
reservoir
opt, opt to
plastic / elastic
embed / embedded
intractable
surrogate / surrogate mother
mutable / mutation
...in response to ...
accommodate
enforce
vanilla
resemble
plausible
habituate to .../ habitutated
these results reinforce that ...
...be accouted for
interplay
episodic
rehearsal
cause-effect
ambiguous
```

```
revise
spontaneously
a wealth of ...
crossmodal
schematic / schematic view
valuable
intricate
dictate / be dictated by \dots
staged
bootstrap
tutor / tutoring
unveil
disclose, disclose the cause
bilateral
innate
deceptive / deception
scaffold
exogenous / endogenous
be congruent with / congruency / congruent triangle
perceptual
bind
causal inference
stationary
disregard
radically
over the course of millions of years
underpin
evolutionary
in-silico
As a consequence = Consequently
inspiration has originated more strongly from ...
acronym
genetic
...take place as ...
ambitious
...derived from ...
arguably
set the stage for ...
```

```
a remarkable increase in ...
dedicated
...than in the past
resonate with the readers / resonate
touch upon
in the remainder of \dots
with the intent / intention to ...
make-up
manifest / manifestation
blueprint
zygote
nurture
cultivate
be now more aware of ...
highlight the importance of ...
deceive
make no pretence of ...
diversity and inclusion
open-ended / open-endedness / open-ended questions
pathway
an alternative to ...
empower
synergy / synergy effect / in synergy
statics / dynamics
conducive / be conducive to ...
reside
delegate
foster
cope with ...
genotype
aspiration
resurgence
synopsis
speculation
pillar
In essence = Essentially
...in light of ...
bloom
```

```
around 2019
shift
It's not after long that ...
bet on ...
masterfully
expertise
neat
be indebted to sb. for sth.
pickle
customary / customarily
brevity / clarity
wit
perturbation
mastery
neglect
performant
ingest
comply with ...
trademark
aforementioned
malformed
blob
glob
a patient is admitted to the hospital
administer drug
concerned
relative
a sick thought
not uniformly understood
moderately
be wrong in ...
subjective belief
a rational person
conscious, make conscious use of ...
inner-held
...be judged to ...
dwell (further) on ...
philosophical issues
```

```
strike a balance
outgrowth, an outgrowth of ...
involvement in sth.
attend a course
span the entire spectrum
Accordingly, ...
In this spirit, ...
sketch
otherwise
stand in the way of ...
attentive
conditioning
omit / omission
recitation
elsewhere
simplification in exposition and sophistication in analytical reasoning
a rich set of ...
go into debt / be in debt
acknowledge
be thankful to ...
Last but not least, ...
take sth. (it) as a given (that ...)
a short review about ...
antiquity
at the outset
toss, a coin toss
a die roll
conceivable / conceivably
excerpt
in accordance with \dots
collective
immediately obvious
underlying
Strictly speaking, ...
pathological
dart, throw a dart
qualify
constitute
```

successive identify namely downstream, ...downstream from ... For example; As another example Proceeding similarly, ... predede, preceding settle on ... by necessity counterpart ...differ from ...in thathinge on the fact that \dots incidentally legitimate / legitimacy tractable / intractable Invariably though, ... inscribe / inscribed equilateral triangle millennium game of chance touch upon lay a / the foundation for ... raise the standard rigor / rigorous influential axiom / axiomatic pervasive / pervasively ...in conjunction with ... traverse / traversal be inferior to ... a much discussed problem stick to / adhere to / insist on under this strategy celebrated ...amount to ... malignant / benign tumor a common first thought

```
aircraft
\dotsstate that \dots
In words, ...
subsystem
subinterval
...consist in turn of ...
populate, be populated with ...
dial up
modem
the probability of interest
facility
facilitate
combinatorics
in principle
thought
a large portion of ...
desired
consecutive / contiguous
cardinality
algebraic identity
instrument / instrumental, instrument readings
two raised to the fifth power = two to the fifth
a notion of
associate with sth. sth.
focus exclusively on ...
qualifier
a lot of new ground
the general line of development
genuine / genuinely, genuinely new
give rise to a value
In what follows, ...
...in place of ...
throughout
conceptually straightforward
range over ...
By a similar argument, ...
...is through ...
characterize
```

```
be either for or against ...
For all its simplicity, ...
...be sketched in the section 3
Note that here and elsewhere, ...
the coin comes up a head with probability p
prior
refer to ...as ...
..., specialized to ...
come up for the first time
be monotonically decreasing with ...
misspell
typo
\dotsbe well modeled with \dots
justification
It is often desirable to ...
monetary reward
...in proportion to ...
a weighted average of ...
As motivation, ...
anticipate
roughly equal to ...
dispersion
pitfall
It is not generally true that ...
at a speed of ...
...is obtained by nothing that ...
prototype / prototypical
attempt, attempt to
coercible
resist
be evolving
I'm still not done learning
set up a structure for ...
...as I see it
elaborate upon ...
groundwork
one thing that initially surprised me was ...
...come into play
```

There is no one right way to ... methodical / methodically linguistics field of study rhythm / melody keen modular mind vocal, vocal awareness chunk first-hand unconventional intonation stick clap consonance / disonance palate most of the time muscle / muscular youngster stick out / stick way out dark is drawing in cavity nasal to name a few look up ... make sb. sure check out ... go over ... due to a difference of opinion homephone make a phone (call) repeat out loud / practice out loud drill ... you won't transform overnight dedicated, be dedicated to ... singleton bisect / bisection timezone

```
polaris
anagram
palindrome
congestion
pertain, pertain to ... = belong to ...
universe
In the same spirit, ...
be destined to ...
...argues in favor of ...
regardless of ...
flaw / flawed
to some extend
paradox / paradoxical
scrutinize
a great deal of information
Roughly speaking, ...
devil / devilish
quirk / quirky
testament
a general agreement between intuition and what is mathematically correct
...extends naturally to the case of ...
imperative
dialog
weave / weaver, be woven into ...
restraint
budget
Over the past three decades or so, ...
purgeable
bump
synergy
affordance
induce
worthwhile
As machine learning is maturing, ...
formalism
toy / non-toy problem
plague, be plagued by ...
reinvention
```

```
induction / inductive
speedometer
insightful
...be called for
In any case, ...
cf. = confer
Graphically, ...
gambler
anticipate / anticipated
for the time being
light bulb
burn out
elapse
meteorite
Sahara desert
..., be it through .../ Be it through \dots
staircase form
line of argument
a case in point
in point of ...
Loosely speaking, ...
snowfall
celebrate / celebration / celebrated
conclude
corrupt
...parallel ...
In complete analogy with ...
vicinity
needless to say = It goes without saying that ...
needle
mark the origin of \dots
a surface is ruled with lines
line segment
acute angle / obtuse angle
midpoint
justify
the remaining time up to completion
metro (train)
```

```
metropolitan
board the train
be analogous to .../ in analogy to .../ an analog of ...
...carry over to the present context
schematic
It suffices to ...
The converse of this statement is also true
stencil / template
chromosome
bilingual
in a row, 7 days in a row
versatile / versatility
variablity
interlinked
in the vicinity
but they still can't rival homo sapiens for complexity
proposition
be agnostic to ...
they can be advantageously combined
better off, better off alone / better off without ...
nuisance, nuisance variable
latent variable
preclude
resort to
causality
neat / neatly
punctuation marks
unleash
I find them severely wanting in abilities
arsenal
divulge
ideology
triumph
..., but that wasn't always the case
proceed in chronological order
hype
extravagant
publicity stunt
```

```
clip
cardinality
a means to an end
It's almost exclusively used for visualization
By itself this isn't very useful, but ...
genre
be akin to ...
induce
spark a great deal of interests
lately = recently
In the past this was all but impossible, ...
in complex learning regime
endorse / endorser / endorsement
amortize / amortization
resume membership
intra- / inner-
episode / episodic
hallucinate
assortative
resilience
discriminate between ...
confine, be confined to ...
a multitude of ...
...outperform ...by a significant margin
...be nigh
grace / graceful / gracefully
a gentle introduction
clarify the relationship between ...
myth = a commonly believed but false idea
cont. = continued
synthesis / synthesize
digest
compositionality = hierarchy
coefficient and intercept
mainstream models
an emerging line of work
cast ...as ...
In the same vein = In the same style of speaking or writing
```

attenuate = weaken
alleviate
meliorate its effects
rife, be rife in ...
discriminate specific tasks
conceived
mitigate, mitigate the risks
commonality
the unified definition of ...
backbone
acyclic graph
thesaurus
proactive
lockdown
oat

sportsmanship playing field therapy dialect stub negate / negation / negative ...with the Bayes normalizer made explicit truly autonomous robot without human supervision comply with ...blueprint from scratch hard-pressed competence / competency sheer, sheer size There's no point doing sth appreciate, appreciate that it's difficult to ...at stake, This example gives a good flavor of the problem at stake the main utility of ...audit scaffold front-matter excerpt amend favicon verbatim reclaimable delineate ordinate booklet coordinator installing manifest presumably ethnicity pathetic malicious heartbreaking be singled out victim merit pandemic furious people are in high spirits circulation racial discrimination paranoid precaution blast out rule people with iron fist agenda protest set the title of the video as a clickbait skyscraper footage invocation well-geared, they're geared towards different things gracefully

11 slam

make it free of noise prolific propeller proximity sloppy rail it deviated from its path

```
diameter
get drift to one side
by-product
azimuth
lawn mower
compromise
surveillance
reef
reefer
archaeology / archaeologist
ceiling
infrared
showcase
conduct the project
proximity, proximity sensor
joystick
revolution, revolution of the wheels
\dotssame holds for \dots
sketch, a sketch of \dots
successive iterative process
it happens from time to time
...prevail in the domain of ...
volumetric representation
there is no way around ...
geodesy
acronym
coin / coined
...thus far
comprise
in-depth
thoroughly
central topic
exclusively
exogenous
amenable, be amenable to ...
exposition
contemporary
...is by no means to be ...
```

```
Rather, ...
descriptive
not infeasible
Such extensions, ...
characterize ...
appear, may appear to ...
provision
in the first place
vastly
overestimate
accommodate certain tasks
postulate
whereabout, the whereabouts of people
accrue ...
...as indicated
This chapter provides in detail ...
projectile
...
concerned with \dots
a comprehensive introduction into / to \dots
subfield
monograph
overarching
temporal / spatial extension
commonality
discourse
insofar, insofar as \dots to the degree that \dots
wordy
laborious
at times
...emerge with ...
superficial
exposition
planetary
be in one's infancy
in the proximity of ...
First and foremost, ...
perturb / perturbation
heavy-duty
```

```
wear-and-tear
flaky
rather crude
realm
stumble / stumbling
pay tributes to ...
Put differently, ...
ambiguity
degree of belief
in the face of \dots
graceful / gracefully
pertain, ...pertaining to ...
distinguishable / indistinguishable
plausible
by no means does ...
momentary
\operatorname{err}
deprive
paramount
coastal
anticipate / anticipation
cut across
reactive / proactive
relieve
insurmountable
sole
sound
...come at a price
weak link
unprecedented
bargain, at bargain prices
branch into / out
self-explanatory
pitfall
set forth, ...set forth below
virtually
familiarize ...
predominant / predominantly
```

```
brevity, ...lies in its brevity
coincide / coincidence
a final concept of importance
stray
..., so as to ...
revolute joint
...entails that ...
...be mediated by ...
single out ...
for didactic reasons
tactile, tactile sense
query
Hypothetically (speaking), ...
in accordance with \dots
in the material yet to come
stochastic / stochasticity
time step
...will be explored pervasively
...as to ...
...is that of ...
reflect
synonym
elucidate
by virtue of ...
know ...with certainty
be entirely ignorant about ...
restrict ourselves to finite situation
postulate
violate / violation, induce violations of the assumption
as a (general) rule of thumb
ramification, have important ramification on ...
with no unique best answer for all ...
a wide array of ...
attain
by induction
predate
easy / involved
scent / scented / unscented
```

```
immense / immensely
treatment
provision
be amenable to ...
it is descriptive of the state of the art
preliminary
accrue
pendulum
steer, steering wheel
articulated / articulated
limb
hexagon
clockwise / counterclockwise
It accepts as inputs ...
hypothesized / hypothesized
moderate
it suffices to ...
perturb
handy
...amounts to ...
retro-, retrospect
formula / formulae
in lieu of ...
erroneous
slippage
This poses no problem for ...
side-step
in action
superimpose / superpose
...pertaining to ...
call for ...
keep ...into account
upon executing ...
factorize ...into
be subsumed into ...
.... One then ...
traverse / traversal / traversable
significant overhead
```

```
importance factor
Care has to be taken in ...
...leading up to ...
discard the information
shed light on / onto ...
As far as ...
sideward
estate, real estate
disguise, in disguise
tactile sensors
fire a signal towards ...
reflective surface
predictable
be paraphrase as ...
specular reflection
problematic
the likelihood of this to happen
coal mine
caveat
herein, Herein lies a key advantage of ...
hereinafter
crude
saturation
recapitulate / recapitulation
drop the distinction between ...and ...
adopt
be among the most popular / important ...in ...
range finder
phantom, phantom readings
eyeball
susceptible, be susceptible to ...
a plain implementation
the main drain of ...
run the danger of ...
ad hoc
pre-compute
advantageous
diminish
```

```
myriad, a myriad of ...
devise
indeterminacy
spiral
ring
introspection
with the advent of ...
alleged
by virtue of the fact that ...
inferior / superior
inflate
enabling technologies
in the pursuit of ...
deceptive / deceptively, deceptively simple / easy
While ..., despite ...
at present
be largely credited for / to ...
strive hard for / to
As we strive to ...
centerpiece
layman, a layman introduction to ...
roam
be endowed with ...
door post
fallen out of fasion
easy to reason about
speculate / speculation
a flurry of ...
intimate, intimate relationship / contact
be intimately related to ...
vanilla, a vanilla ...
in the very beginning of ...
persist, ...persists over time
provisional
novice, be novice in ...
in the light of ...
monolithic
trunk, tree trunk
```

```
be suspected to ...
hurdle
hinder
hamper
sidestep
a close-up view of ...
considerable
be anticipated to ...
a wealth of information
fire hydrant
visual imagery
commodity
be in line with \dots
histogram
ramp
quadrant
trigonometry
that's the case
judge by yourself / judge on yourself
time to wrap up
file an issue
run into issues / problems
tray
whale
synopsis
seasoned
dialect
directive
dictation
comply with ...
cutting-edge
what appears to be computationally easy in one parameterization is involved
```

overlay / overlaid, ...overlaid on ...

elapse / elasped, time elasped

depletion

oracle

an educated guess

in the spirit of ...

```
in the other, and vice versa.
\dotsstems from \dots
alternate ...with ...
up front
subsume
curvature
render ...inapplicable to all but the most trivial problems
distort / distortion
resort to ...
incur
a logical choice
...deemed ...
contender
cooperation and division of labour
It's difficult in that ...
bring ...to bear on / upon ...
...has to do with ...
at times
be in stark contrast to ...
In a nutshell, ...
artificial beacons
intolerable
ceiling
kidnap / kidnapper
One might argue that ...
other than ...
Of particular interest are ...that ..., and that ...
accommodate noise / dynamics
through some other means
hazard / hazardous
impasse, recognize the impasse and escape from it
the hardness of the problem
coincide with ...
hallway
be flattened out
brittle
the most simple at all is ...
take ...for granted
```

thoughtful reconcile asymptotic / asymptotically with relative ease deposit cliff distant tentative situate, ...situated in ... provision / provisional shrink / shrunk / shrinkage reduce ... by a significant factor in the face of ... lean ...deviates from ... reduce ...to ... It is therefore common practice to ... Little is currently known about ... distinctiveness scarce culminate in / into ... The advantages of ...are manifold: ... predate, ...predates ...by many centuries picture a situation where ... proactive

selectively gist wraparound exploit for the sake of ...exposition fabricate / fabricated mandate be at odds with ...decentrally overhead, necessary overhead comparable facility for ...ethics / moral rod revenue, revenue figures obtainable inquiry ...as is we don't know ahead of time ...in a related, but slightly simpler, way to ...couch, couch ...in / as ...embody moderately, moderately large In retrospect, ...take as input ...save in the location ...a collapsed version coalesce be proportional to ...for clarity and conciseness discrepancy a short wrap-up a spectrum of ...proactive checkerboard practically, it's practically zero ..., where disks correspond to point features and dashed arcs to links logarithmic employ a technique / step circumvent extra conjecture take ...with a grain of salt rudimentary allusion cafeteria ...formerly at the head of the queue get rid of ...smear it's mathematically more sound random clutter the gold standard of ...fine-grained the number of ...are in the tens of thousands ...,

namely ...decipher counterintuitive by virtue of ...the cell is free outweighed that of it being occupied have a hard time doing sth black correspond to ..., and white to ...make decisions exclusively based on ...disparity it's not an easy endeavor poll vignette at sb's disposal affirmative sink in some instances exhibit excellent performance in ...fielded systems a naive implementation if not properly treated prevent the system from working ..., arguably the most popular ...to date turn our attention to ...narrow spikes unassailable henceforth, ...which henceforth will be called ...under mild conditions be unaware of the state repetitive daunting manifest the advantage is threefold culprit less pronounced deprivation wipe out last resort versatile lay the groundwork for ...throughout the remainder of the book However, this shall not deter us here Admittedly, ...low-end / high-end the ambiguity is resolved ...of practical importance It is not bound to a limited ...trade off ...and ...As our illustrative results suggest, ...blend ...seamlessly with ...paramount spread over a large volume a rather simple ...add an additional level of robustness If we were to ... This is even true for ... discuss in length Luckily, a simple trick provides remedy, ...Without delving into too much detail, ...depletion In a nutshell Whereas ..., ...be implemented in time logarithmic in the number of features descendant barring ...investigate it in more detail first principles be largely equivalent to ...On the surface, the difference looks rather marginal The reader may recall that ...This is problematic when ...a large spectrum of ...the mathematical derivation is more involved two orders of magnitude savings a sequence of ... of growing size decent, a decent job misalignment lecture hall grit workaround there's no black magic around that null points successive in a nutshell malicious be known a priori detrimental, be detrimental to ... You'll be a master by the time you're at my age one instance of this approach envision hopefully it helps more than hinders cluttered / clutter slippage / slip on the fly criterion / criteria equirectangular It is not without limitations when compared with ...One was already discussed:shows no such time dependence be superior in accuracy to ...elucidate, This difference will be elucidated below, where ... The basic intuition behind ...is remarkably simple pay tribute to ...induce a constraint It is linear in the time elapsed equally Attention has to be payed toculminate into ...bookkeeping be composed of ...square matrix / quadratic matrix Subsequently, ...outline, The algorithm is outlined in Table 1 The quality of ...depends on the goodness of initial estimates derive from them the ...infinitesimal For now, it shall not concern us that, with a few differences pertaining tohighlights an essential characteristic of ...alleviate the problem by ...The interested

readers shall be referred to the bibliographical remarks for more pointers to ...manifest itself by ...keep the computation low the techniques yield favorable results bipartite postpone ... has emerged from a number of different scientific fields a number of follow-up papers subterranean Following observations in ...SLAM is a highly active field of reasearch a more detailed elaborate model artificial beacons pave the way from ...to ...seminal, seminal papers / seminal algorithms It parallels work by, albeit ...occasional from time 1 all the way to time t by virtue of ...issue command provision pay tribute to ...To efficiently solve many tasks envisioned to be carried out by mobile robots, ...parking garage a bird's eye view of the area with the sole use of its onboard sensors the advancement in the field of ...the synthesis of the method The transition model $p(xt \mid xt-1,ut)$ is represented by the two edges leading to xt and represents the probability that the robot at time t is in xt given that at time t-1 it was in xt and it acquired an odometry measurement ut. exteroceptive An alternative representation to ...isconsists in ...sensor dependent / sensor agnostic system integration

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fertile at your /our disposal well / wells crew surmise present quite a challenge sketch out ...tantalize / tantalizing all the more be intrigued by / with ...fruitless / fruitlessness depot readily count on ...roadblock ever-increasing liken ...to ...elicit once craftiest programmer at the core of ...prominent Having ..., we then ...end (up) with ...at all times pile, a pile of ...get bogged down in ...wording short circuiting inferior algorithms abuse endeavor, endeavor to ...dexterity suppress, suppress tedious details ...that really interests us motif stop once ...bend, a tight bend an additional twist values that have yet to be copied values that will be copied over bottom up, bottom-up approach top down, top-down approach ...progresses from bottom to up division of the problem we reason as follow we have that ...an argument justifies this claim among other factors hyphen typeset in small caps interdependent After the line containing procedure name come one or more lines of code flush, flush the toilet / flush left in the eyes of ...For the most part, ...Mindful of request of our readers to ..., we ...ladder line up ...Upon seeing ...trail-and-error appraoch the references will resolve to the line numbers On rare occasions, ...out of order check ...against ...the initial call to either version the only way in which ...a one-to-one correspondence between ...and ...the other way around

be tailored to ...negligible an exhaustive search In so doing,: a contradiction. hallmark a simple inspection in spite of the two key ingredients that an optimization problem must have discuss more fully ...characterize ...contains within in ...supposition give rise to ...unless, Unless we could guarantee that ..., we would ...we first ...and, having ..., ...in a ...fasion informed, an informed choice / opinion ...as well be tempted to ...splice the index / vertex at which we ...excise ...in the sense that ...contradictory in greater detail examine a problem ..., as does ...inspection, inspection of the procedure yields ...as a practical matter as a matter of fact ...saves us a significant amount of work ...fill in the table ...has yet to be filled in Each subsequent time that we encounter this problem, we ...upon ..., That depends on / upon the circumstances Note where it resembles ...organism a strand of .../ a string of ...To be precise, ...eliminate the table altogether ...so as to ...a search will be for it caption, the caption of the figure nor can we necessarily ...an exhaustive search contiguous, a contiguous range ...has as its leaves ...There is one detail worth nothing about ...Bear in mind, ...For the base case, ...its for loops are nested three deep take on at most n values complacency